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THE FORGE FIRE

The Newsletter of the Indiana Blacksmithing Association, Inc.

An Affiliate Of The Artists-Blacksmiths' Association of North America, Inc.

IBA is a Not For Profit Indiana Corporation recognized by the IRS under section 501(c)(3)

9:30 AM is the regular meeting time for IBA Hammer-Ins
with beginner training available at 9:00 AM.

PLEASE MAKE SURE TO ASK FOR HELP!

**If you would like an IBA membership application form,
please contact Farrel Wells, Membership Secretary
(765) 768-6235.**

BULK LOTS ARE AVAILABLE TO DEMONSTRATORS,
SHOPS, SHOWS AND OTHERS WILLING TO MAKE THEM AVAILABLE.
WE APPRECIATE YOUR HELP.

The Indiana Blacksmithing Association, Inc., its staff, officers, directors, members, and hosts and the *Forge Fire*, specifically disclaim any responsibility or liability for damages or injuries as a result of any construction, design, use, manufacture or other activity undertaken as a result of the use, or application of, information contained in any articles in the *Forge Fire*. The Indiana Blacksmithing Association, Inc. And the *Forge Fire* assumes no responsibility or liability for the accuracy, fitness, proper design, safety, or safe use of any information contained in the *Forge Fire*.

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More nearby resources and organizations for blacksmiths:

Rural Smiths of Mid-America:
Meetings are on the first Saturday of each month
Call Ron Gill
317-374-8323 for details

IBA MEETING SCHEDULE

Check the latest *Forge Fire* for monthly IBA revisions.

Mar 20 2021	IBA BUSINESS MEETING VIRTUAL—ZOOM
Apr	TBD
May	TBD
Jun	TBD



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Dates to Remember

March 20 Annual
Business Meeting
via ZOOM

Editors Message

We will have a virtual business meeting this year. A test meeting was held in February and the participants agreed the format was acceptable. Details for accessing the meeting are shown below. Since travel will not be necessary, the board decided to move from the historical mid-morning start time to an early evening start.

If do want to participate in the meeting, **please mute your microphone when you are not speaking.** That will reduce background noise and improve audio quality for everyone.

Annual Business Meeting on Zoom:

Date: March 20, Time: 7:00—9:00 PM (Eastern Daylight)

Zoom Login: <https://cummins.zoom.us/j/93194066361?pwd=R1F6STBXcFJoS09ndGI6RkNmTU4yQT09>

Phone:

(use any number, you will be asked to enter the meeting ID followed by #):

646 558 8656	651 372 8299	786 635 1003
267 831 0333	301 715 8592	312 626 6799

Meeting ID: 931 9406 6361 Pass code: 773886

The login link will enable both audio and video. You should receive a prompt if you want to use the ZOOM audio. If you have trouble hearing, you may want to turn off the ZOOM audio and use one of the phone call in numbers. You may also phone in without video connection.

On a different topic, the Indiana State Fair Board is expecting to hold a fair this year. The format will be different as the Fair Board is expecting to close the grounds two days a week. They are also looking at ways to enforce social distancing. Bill Corey is working with the board to find ways to meet the safety protocols without blocking air flow to the forging area. More details will be coming.

I am sending the Forge Fire out a few days earlier than normal in order to deliver the message regarding the business meeting. I may miss some satellite group news. I apologize for that and will include any delayed news in the April edition.

IBA website: www.indianablacksmithing.org **IBA Facebook page:** www.facebook.com/groups/IndianaBlacksmithingAssociation/

IBA Satellite Groups and News

1) Sutton-Terock Memorial Blacksmith Shop

Meet: 2nd Saturday at 9 AM
 Contacts: Fred Oden (574) 223-3508
 Tim Pearson (574) 298-8595

2) Jennings County Historical Society Blacksmith Shop

Meet: 2nd Saturday at 9 AM
 Contact: Ray Sease (812) 522-7722

3) Wabash Valley Blacksmith Shop

Meet: 2nd Saturday at 9 AM
 Contacts: Doug Moreland (217) 284-3457
 Max Hoopengartner (812) 249-8303

4) Fall Creek Blacksmith Shop

Meet: 4th Saturday at 9 AM
 Contacts: Gary Phillips (260) 251-4670

5) Maumee Valley Blacksmiths

Meet: 2nd Saturday
 Contacts: Clint Casey (260) 627-6270
 Mark Thomas (260) 758 2332

6) St. Joe Valley Forgers

Meet: 4th Saturday at 9 AM
 Contacts: Bill Conyers (574) 277-8729
 John Latowski (574) 344-1730

7) Rocky Forge Blacksmith Guild

Meet: 2nd Saturday at 9 AM
 Contacts: Ted Stout (765) 572-2467

8) Meteorite Mashers

Contacts: Mike Mills (812) 633-4273
 Steve King (812) 797-0059
 Jeff Reinhardt 812-949-7163

9) Whitewater Valley Blacksmiths

Meet: 2nd Saturday
 Contact: Keith Hicks (765) 914-6584

10) Bunkum Valley Metalsmiths

Meet: 1st Saturday
 Contacts: Jim Malone (812) 725-3311
 Terry Byers (812) 275-7150
 Carol Baker (317) 809-0314

11) Covered Bridge Blacksmith Guild

Meet: 1st Saturday
 Contact: John Bennett (812) 877-7274

12) Snake Road Forge

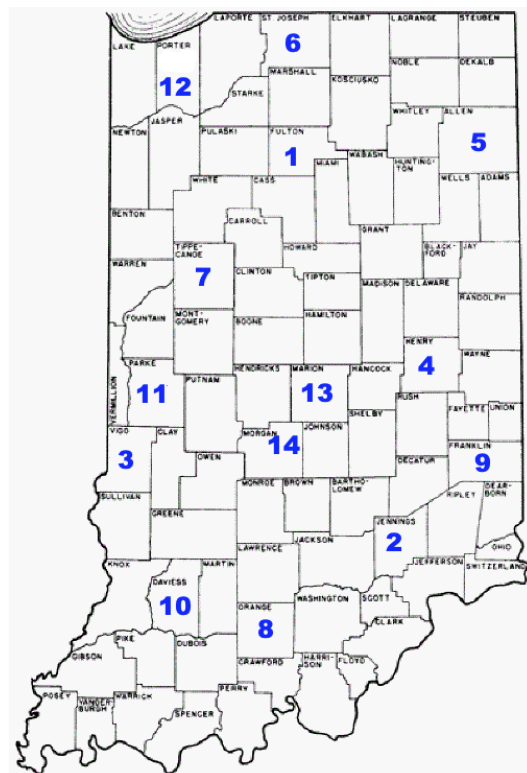
Meet: 1st Saturday
 Contact: Rod Marvel (219) 241-0628

13) Satellite 13

Meet: 4th Saturday
 Contact: Darrin Burch (317) 607-3170
 Doug Wilson (317) 439-7684

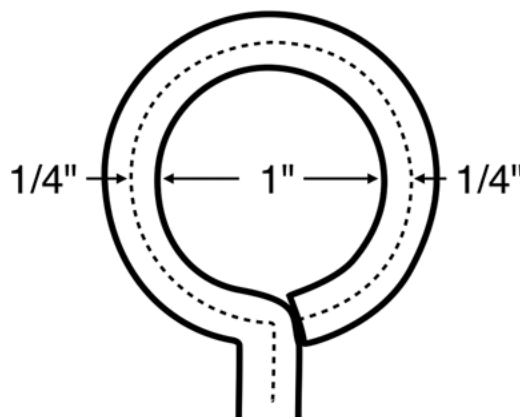
14) Old Town Waverly Blacksmiths

Meet: 2nd Saturday
 Contacts: Mike Lyvers (317-728-5771),
 Kenny Hale (765-318-3390),
 Mike Jackson (317-509-9115).



Campfire Cooking Through the "Eye's" of a Blacksmith

Cody Sadberry, Lakeside



First, we need to calculate how much material (length) is required to make the eye. This is accomplished with the following formula:

Circumference equals Diameter time Pi $C = D \times \pi$

For this example we'll use 1/2" round stock. Let's say we want an eye with a 1" inside diameter.

Taking a centerline measurement of our 1/2" stock shows that we have 1/4" on either side of the inside diameter. That gives us 1/4" + 1" + 1/4" or 1 1/2".

So, using our formula $C = D \times \pi$, we can insert our measurements. $1.5 \times 3.14 = 4.71$. For our purposes here, 4.75" is close enough. So for a 1" inside diameter eye, on a piece of 1/2" round bar, we need 4 3/4" of length for the eye.

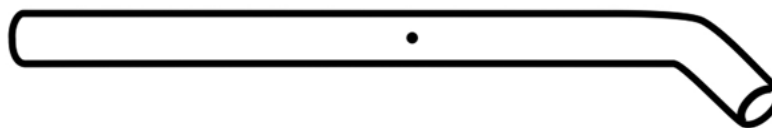
Knowing how to calculate this has great value if you need to make multiple bars with eyes on both ends and they have to be the same length.

Now let's forge an eye:

Step 1: Measure 4 3/4" from one end of the bar and mark it. Transfer that pencil mark onto the bar with a center punch, or "knick" it using a sharp edge on your anvil with a hammer blow.



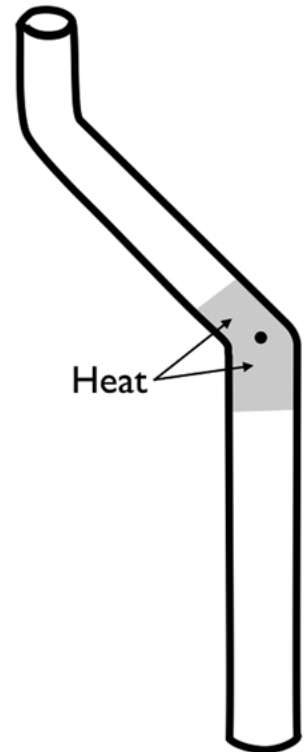
Step 2: Take a short heat on the end of the bar and knock it over on a soft edge of the anvil. Bend about 1/2" to 3/4" to somewhere around 45°.



Step 3: Take a heat at the mark you made for the length when you measured for the eye. Turn the bent over tip "up" and bend to a little more than 45°. Bend it a little farther than you think you need.

Tip - Quench on either side of the heated mark to localize heat for the bend.

Step 4: Take a heat on the whole length for the eye and start “turning” the eye on the horn of the anvil using “glancing” blows to minimize hammer marks as much as possible. Remember to lower your tong hand as the eye comes around. As you start to close it up you can move to the anvil face and begin to “roll” it up much like a scroll. Work back and forth between the two to move the metal where you need it to go. Take it slow. Don’t go too far too fast! Utilize heat to get it to bend where you want it to bend. Remember to sight down your work as you go and keep things straight. Ideally we want a round eye, not a teardrop shape. A perfectly round eye is very difficult to accomplish. Do your best!



Now that you have learned how to turn a proper eye, let's put that very versatile skill to use!

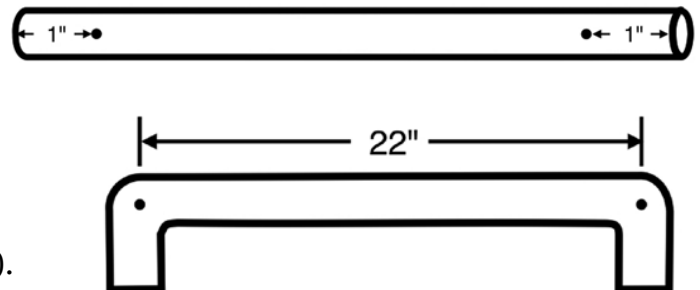
Project #1: Modular Cooking Grate **Cody Sadberry, Lakeside**

Material: 20 1/2 feet of 3/8" round bar cut into 2 - 24" sections; 10 - 20" sections

Steps:

Make the two crossbars.

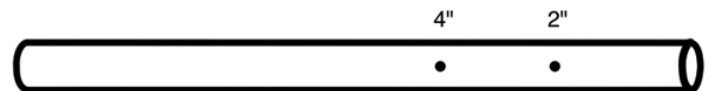
1. Take both 24" sections and mark 1" from either end. Transfer your pencil marks with a center punch or put a 'knick' with a hammer blow on a sharp edge of the anvil.



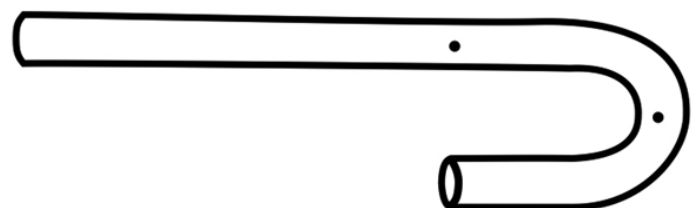
2. Take a short heat at each mark and bend to 90°. (quench on either side of the mark to localize heat).

Make the 4 stakes

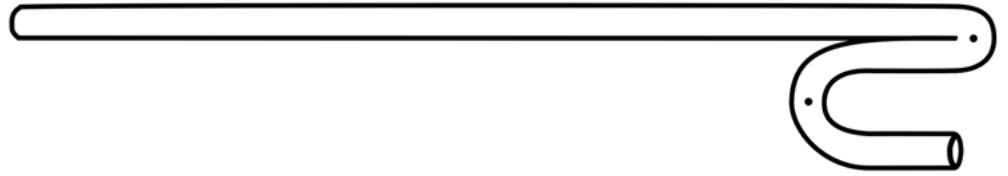
3. Mark 4 of the 20" sections at 2" and 4" on one end of the bar.



4. Heat the first 2" and bend a hook “U” shape. The end of the hook should line up across from the 4" mark.



5. Take a good heat at the 4" mark and bend in the opposite direction. Fold it tight. (quench on either side to localize heat). Re-heat if needed to get it completely folded. Make all four of these.



6. Forge a short taper on the ends of the bars.



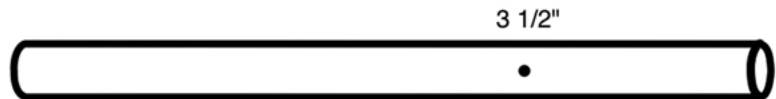
Make the 6 eyes that make up the grates

7. Calculate your measurements for a 3/4" eye using 3/8" round bar.

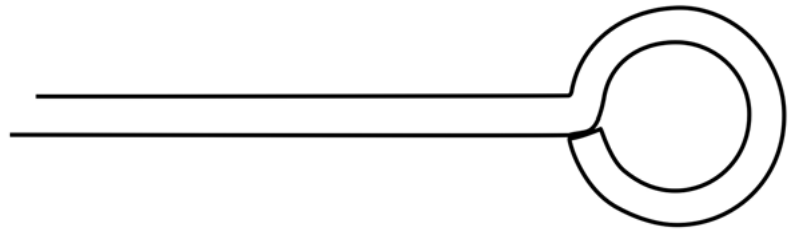
$$C = D \times \pi \quad 0.375 \times 0.75 = 1.125 \text{ D}$$

Therefore $1.125 \times 3.14 = 3.5$. This is the length we need for the eyes.

8. Take the last 6 20" sections and mark 3.5" from one end of each.

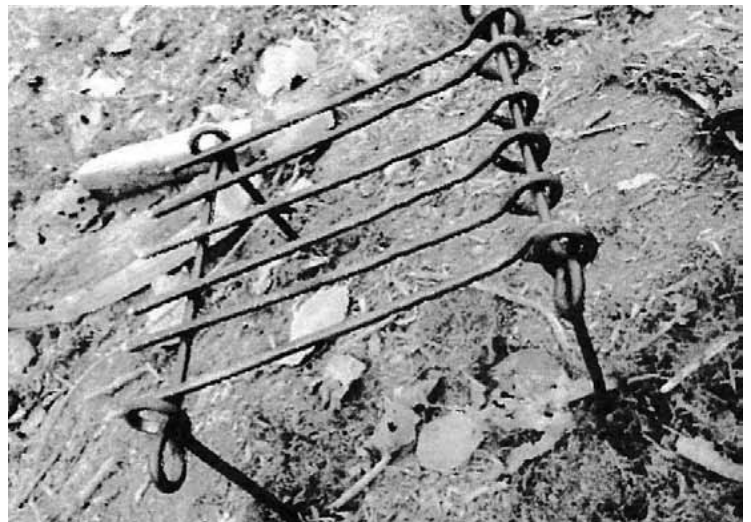


9. Using the skills you have just learned in the prior lesson, turn an eye with a 3/4" inside diameter on all 6 sections.



10. Assemble grill grate. For closer spacing of the grill grates, more can be added.

Time to build a fire!



This 3-page article re-printed from the March/April 2021 edition of California Blacksmith the newsletter of the California Blacksmith Association

Reprinted from Appalachian Area Chapter Jan-Feb 1999

Tenon Forming

By Kitt Wattenbarger

In traditional joinery, well made tenons in conjunction with punched or drilled holes form aesthetic and strong joints without the constraints of forge welding. Tenons can be made any shape compatible with the corresponding hole; however, due to space constraints and utilization, only the round tenon is discussed in this article. Where square, rectangular, or oval shaped tenons are used for special circumstances, the steps are similar to those for the round tenon.

Tenon sizes for most contemporary blacksmith projects are 1/4" to 1/2" in diameter, with the size dependent on the parent stock. Richardson, Bealer, and Andrews give only passing mention to the tenon in their texts and form their tenons over the edge of the anvil to a size that approximates the size of the receiving opening. Consistency of the tenon size and shape are tough for the average smith under these circumstances. Bill Richardson of the Alabama Forge Council has simplified the problem of tenon consistency with a tenon forming tool easily made from approximately 24" of 1/4" x 1" flat stock and 8" of 1" square stock. To fabricate the tool, two 4" pieces of the 1" square stock are clamped together with a business card between them and drilled on a drill press. The card acts as a spacer and helps center the drill bit as the tenon channel is drilled. More than one size of tenon can be drilled in the tool. 1/4" x 1" flat stock is welded to the drilled square stock as a handle and joined by bolts for ease of adjustment.

Once round and appropriately sized, the tenon is trued up and the shoulder squared with a monkey tool (C). An annealed hollow core jackhammer bit is ideal for making monkey tools because of the decent steel and the pilot hole has already been drilled.

The tenon is riveted hot in a punched or drilled hole to secure the joint (D). Header tools, three or four sided flat pattern, textured, decorated, flush countersunk, or rivet head design of your choice allow considerable artistic leeway in the finished project.

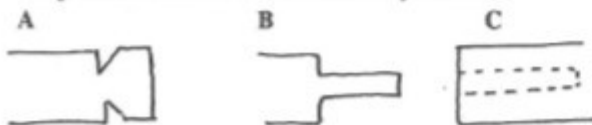
C.K. Wattenbarger

Ray Spiller's variation on tenon tools.

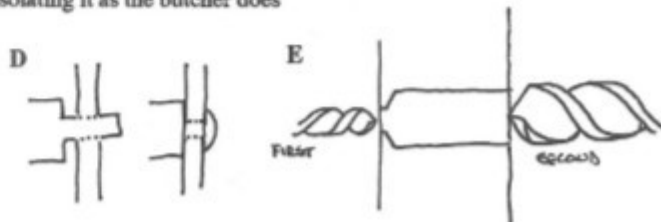
During the 1999 Christmas meeting demonstration, Ray Spiller showed us his variation on making these type of tenon forming tools. He makes an individual tool for each size tenon he needs with two holes drilled in it. The first has a butcher-type ridge for isolating the metal, then the second hole is drilled to size the way Kitt describes. To make the tool for, let's say, 1/4" tenons on 3/8" rods, first drill two 1/4" holes through the blocks with the business card spacer. Then for the first hole, go back and drill almost all the way through with a 3/8" drill bit (E). You



To start a tenon, hot steel is butchered approximately 2/3 the depth of the desired shoulder with a chisel, butcher hardie, or a guillotine-type tool (e.g. Smithing Magician) with butcher dies (A). The tenon is formed with the tenon tool by hammer, treadle hammer, or power hammer with flat dies (B). Be sure the iron is kept hot and rotated in the tenon tool between each hammer blow. Continue until the tool jaws meet and the tenon is uniformly round.



could even go so far as to modify the drill bit by grinding a sharper angle on it. This will leave a little ridge of metal that will act like a butcher, biting off a bit of metal and isolating it as the butcher does.



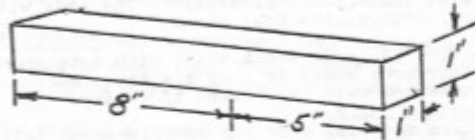
Reprinted from Appalachian Area Chapter October 1995

AN INEXPENSIVE SWAGE

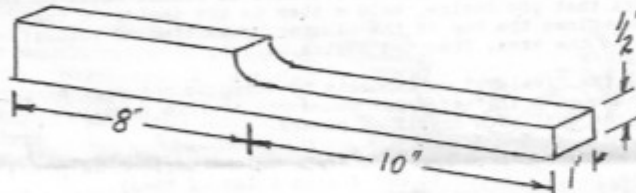
by Al Cannella-- Appalachian Area Chapter

Have you ever needed a "V", square or round swage for forming ends or forge welding such as cable knives or basket weaves?; and cursed about the high cost of swage blocks. Well here is a simple substitute to use on your anvil.

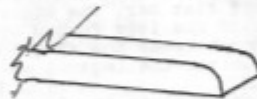
1-Take a 13-inch piece of 1-inch square rod (or whatever size fits your hardy hole)



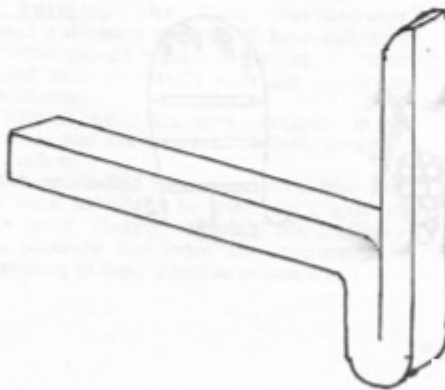
2-Fuller down to slightly less than 1/2-inch--5 inches from one end. This will increase in length to about 10 inches.



3-Round off the top end of the 1/2-inch section.

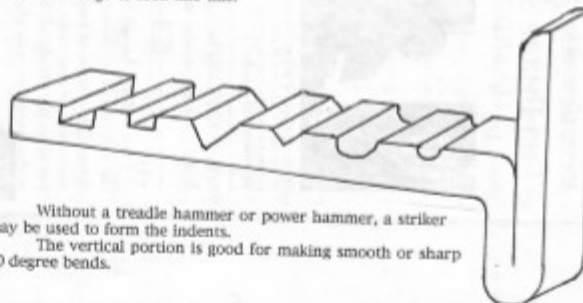


4-Now bend this section down through 90 degrees for 3 inches, then bend back up through 180 degrees to produce a piece like this;



Work this bent section to fit nicely into your hardy hole.

5-Now, by using yellow heats and square and round bars, you can form your own swage to look like this:



Without a treadle hammer or power hammer, a striker may be used to form the indents.
The vertical portion is good for making smooth or sharp 90 degree bends.

ABANA NEWS

Business of Blacksmithing classes

Registration is now open for the digital class *Business of Blacksmithing* taught by Leigh Morrell. Digital educational content is a new arena for ABANA and we are very excited to host this four class series beginning March 23rd @8pm EST. Click the button below for more information and registration.

[Business of Blacksmithing](#)

National Curriculum

In alignment with the goals of ABANA to continue education and perpetuation of the art of blacksmithing we are proud to announce the addition of the Education menu on the ABANA website. Within this new menu, members can find resources on the recently adopted National Curriculum, upcoming digital classes, a list of forging and craft schools across North America and much more.

[National Curriculum level I](#)
[National Curriculum level II](#)
[National Curriculum level III](#)

ABANA Raffle

This time around we are glad to offer you an E-Ticket. This will expedite the time it takes for you to receive a ticket. If you do not have an email we can send you a ticket in the mail. There is no limit on the amount of tickets that can be purchased.

Hurry, we will only be selling 5000 tickets. Drawing to be held at our Johnstown, PA, office May 1, 2021. Winner need not be present. Whether you win or not we hope you will support our sponsors as they have supported us.

Prizes and Sponsors are:

- 1st Place: Big Blu, Max 155 Power Hammer \$8,695.00 Value
- 2nd Place: Wilmont Grinders, Quatro Grinder \$3,200.00 Value
- 3rd Place: Holland Anvils, 260 lb. Double Horn Anvil \$1,850.00 Value
- 4th Place: Beaumont M. Works, KMG 10, 3 Speed Grinder \$1,800.00 Value
- 5th Place: Centaur Forge, Pair of Swage Blocks \$1,020.00 Value
- 6th Place: NC Tool Co., Whisper Momma Gas Forge \$645.00 Value
- 7th Place: Blue Moon Press, Collection of Books \$ 236.00 Value
- 8th Place: Blacksmiths Supply, 11 Pair Tom's Tongs \$450.00 Value
- 9th Place: Saltfork Craftsmen, Affiliate, 36" Cone Mandrel \$200.00 Value
- 10th Place: April Witzke Forge Aprons, Leather Forge Apron \$200.00 Value

All items are FOB sponsors location. Winners are responsible for all applicable taxes.

Tickets are \$10 each [Purchase Raffle Tickets](#)

Artist-Blacksmith's Association of North America
PO Box 462
Johnstown, PA 15907
February 2021

Greetings from the Artist-Blacksmith's Association of North America —

"This monthly ABANA Affiliate Newsletter is intended to forge stronger communications and relationships amongst ABANA affiliates. ABANA encourages affiliate leaders to forward this newsletter directly to its club members and/or include any or all content in your club's newsletter."

JoAnn Bentley is Retiring

One thing I have learned over the years is, the person in the office that keeps everything in order and keeps us going is the one that usually knows everything and keeps an organization afloat. For almost eleven years JoAnn Bentley has been that person for ABANA. If you have ever contacted ABANA through the Central Office, you probably talked to JoAnn. JoAnn has decided to retire to travel and spend time with her husband. Personally, there is no way I can thank her enough for the job she has done for ABANA. Thank you JoAnn, we will miss you!

Updating Contact Information

In November and December, the Affiliate Committee made a monumental effort to contact the ABANA Affiliates and update the Affiliate contact list. With the new year, perhaps some of the Affiliates will be having elections and possible changes in leadership. If you have any changes, please let the Affiliate Committee or the Central office know so we can update your information and your club can continue to receive pertinent information from ABANA. Affiliate Committee members are, Chris Rowan Chairman, Scott Kretschmer, Laura Armstrong, Ray Grosshans, John Williams and Jerry Boyd as an off-Board member. Email the Committee at affiliate@abana.com

Controlled Hand Forging

Very often on the social media sites new blacksmiths will ask basic questions about where to learn a particular skill. There are more ways than ever to expand one's ability but a very quick and easy place to get started is the Controlled Hand Forging lessons which can be found on the ABANA website <https://abana.org/education/controlled-hand-forging/>. This voluntary program is a progressive set of lessons which emphasize ten forging fundamentals and is valuable to blacksmiths of all skill levels.

The 'Measured Making - #150mmchallenge' exhibition is now on display

The 'Measured Making - #150mmchallenge' exhibition is currently on display at the Appalachian Center for Craft in Smithville, TN, through March 12, 2021. The #150mmchallenge is curated and produced by Delyth Done and Ambrose Burne, Hereford College of Arts UK, and is being toured in the USA by ABANA at select venues through May 2022. To view the touring schedule and read more about this exhibit which reveals a rich diversity of practice and discourse, please visit the **#150mmchallenge exhibition** page on the ABANA website.

Safety tip of the day, "no horse play or use of intoxicants". https://abana.org/wp-content/uploads/affiliate-resources/Safety_First.pdf

<https://abana.org/>
<https://www.facebook.com/groups/1018597368285578>
<https://www.instagram.com/abana.blacksmith/>

Sincerely,
Jerry Boyd
ABANA Affiliates Committee Chair
325-207-8253
abanagroupnews@gmail.com

Tendonitis Relief by Gerald Franklin

Tendonitis in the elbow, sometimes referred to as “Tennis Elbow” is a com-mon ailment among blacksmiths. The main cause, I’m told, is gripping things too tightly (like hammers or tongs). Once you get it, treatment is a long process. It’s easier and more pleasant to prevent it in the first place.

Exercise is the key to both prevention and cure. It works by strengthening the set of muscles that oppose the ones that we use to grip things. To perform the exercises you’ll need 3 fairly stout rubber bands. I like the ones that the mail carrier uses to hold the mail in a bundle. Put the set of bands around the ends of your fingers as the photos show. Spread the fingers out as far as they will go and then bring them back towards the start point. This is one repetition, or rep. Do three sets of ten reps three times a day for a total of 90 reps per day.

I like to keep my bands close to my favorite recliner so that they are handy. As you strengthen the opposing muscles, you will progress toward “Tendonitis Immunity”. If you have to treat a case of tendonitis, don’t expect quick results but if you stay with it, you should eventually get well. When you do get well, keep doing the exercise daily to prevent future attacks.

Gerald Franklin



Originally published in the February 2021 Saltfork Craftsmen Artist-Blacksmith Assn. newsletter.

“Blacksmith’s elbow” is really painful – I’ve had it, twice. Treated it each time with this technique, it works really well!



The *FORGE FIRE*
Newsletter of the
Indiana Blacksmithing Association, Inc.

Farrel Wells *Membership Secretary*
8235 E 499 S
Dunkirk, IN 47336-8807

First Class Mail

Address Correction Requested
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sender

IBA Virtual Business Meeting
March 20
7PM