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November 2020

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.

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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.

No November Hammer In

Check IBA Facebook site for up to date news about hammer ins

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Dates to Remember

TBD

Forge Welding Basics

Beth Holmberg, San Diego

Several Level I projects include the skill of forge welding: joining two pieces of metal into one, using only the heat of the fire. Blacksmiths have been doing this for over 3000 years before the first welding torch was invented; you can do it, too!

Your instructors will teach you how to weld, and what to look for, but here are a few reminders and trouble-shooting thoughts.

To forge weld steel, the pieces of metal must be **in contact with each other, clean**, and **near-melting**. They must also be the **same temperature** (color) as one another, and **heated through**. If *any* of these are not true, do not attempt your weld: fix the problem, and try again. When you weld, use hammer blows that will penetrate to the welded area, but no harder- metal at welding temperature is very soft and will forge down easily (...and get too thin and lose welding heat).

In Contact: Before you weld, you should make sure that the two surfaces are really in contact with each other. You might need to forge a scarf or adjust a bend to do this. A major reason for weld failure is trying to weld metal that is only nearly touching- it pulls back to this position as it cools, breaking the weld!

Clean: You can weld steel; you can't weld scale, clinker, ash, or dirt! Have a clean fire (low in clinker and ash) with plenty of burning coke. Keep your anvil top clean. Brush the scale off your metal. Use some borax to flux the weld area. Borax melts onto hot steel and simply prevents oxygen from reaching the metal, so that scale can't form. Flux the area around the weld, too, to avoid losing a noticeable amount of metal to scale. You don't need tons of flux- only enough to cover the surface. Remember that flux is not glue!

Near Melting: You do not want your steel burning and sparkling because it melted- melting steel is hard to weld! Know what melting/burning color looks like, and aim for a color just a bit cooler. "Welding temperature" is actually a range of temperatures, and extends down surprisingly far.

Matching, Deep Heats: If the two pieces are both in the welding range, but are not the same temperature (color), the weld will probably fail. If the metal is welding heat on the outside but cooler in the core, it will equilibrate outside the fire, and the weld will probably fail. Prevent both of these by having a deep pile of burning coke, and placing the parts to be welded where they will get the same heat, and not oxidize. Don't dig the steel down in the fire, where the heat is uneven and oxygen- rich! Let the metal soak in a medium orange fire before slowly increasing the air to bring the temperature up- this will help heat the metal all the way through.

If At First: The best way to learn to weld is by practicing! If you fail, try to figure out why and then try again. If you do succeed...try again, so that you'll learn more!

This article re-printed from the November/December 2020 issue of the California Blacksmith, the newsletter of the California Blacksmith Association

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

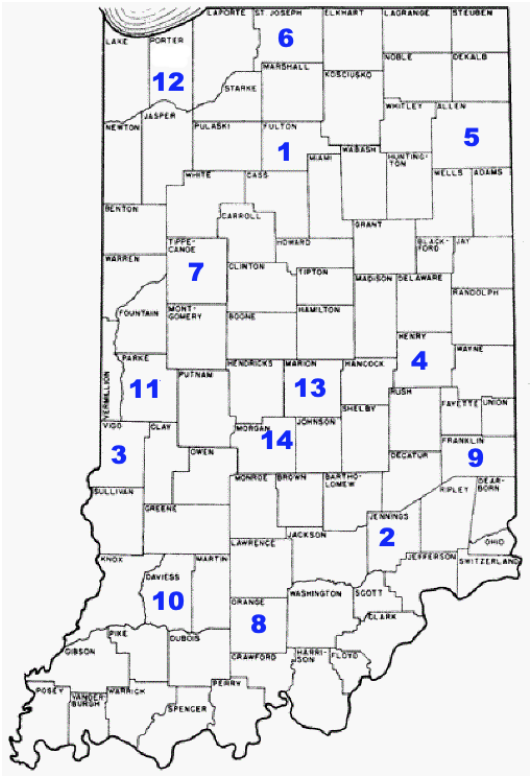
3) Wabash Valley Blacksmith Shop
Meet: 2nd Saturday at 9 AM
Contacts: Doug Moreland (217) 284-3457
Max Hoopengarner (812) 249-8303

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).

Jennings County Historical Society Blacksmith Shop

The Vernon Historical Society Blacksmiths met at Vernon on the 10th. Drew Davis worked on a towel holder. Dave Good made a pair of calipers. Jeff Farmer made a leaf using only the power hammer and gave a leaf demo. Ray Sease worked on a candle holder. Kenny Dettmer, Jeff Farmer , Brion Gray, and Bill Wonning worked on a special project. ~~November meeting will be the last one at Vernon this year. December's meeting will be at John Cummings(tentatively).~~ Hope to see you next month. as usual, bring iron in the hat and money. Paul Bray

Note: Due to increased COVID19 infection rates the November and December hammer ins will be canceled—Jennings County Historical Society Blacksmith Shop forge masters

IBA Satellite Groups and News (continued)

Bunkum Valley Metalsmiths

The Bunkum Valley Metalsmiths met Saturday November 7th. We had over 20 in attendance. The pictures show some of the smiths hard at work. We were impressed with Randall's stainless Deer creation, see picture. It is a work of art. It was perfect weather and we had a delicious lunch. Not only did we have turkey but homemade chicken noodles, soup and also desserts including a black walnut cake! We meet the first Saturday of each month and everyone is welcome. Have a blessed Thanksgiving! Next month everyone is welcome to bring a handmade ornament for raffle!

Floor Stand Candle Holder

By Bill Corey

This is a floor stand candle holder I forged for my Masonic Lodge:

I started by forge welding two pieces of 1 1/2" X 1/4" flat bar together and then hot punched a hole for the base.

This 4-page article re-printed from the November 2020 issue of the Saltfork Craftsmen Artist-Blacksmith Association newsletter

Then I forge welded a basket twist following Mark Aspery's instructions on You-Tube forming a "node" on the "stem" then forge welded this to two pieces of 1/2" square bar.

Then I forged a tenon on one end that would later be attached to the base, and forge welded a short piece of 1/2" square around the other end, forging it into a hexagon shaped decorative knob adding a short twist just under it.

I then cut 3 bobeches (drip cups) out using a 3 1/2” hole saw on my drill press and forged 3 candle cups from 1” steel tube.

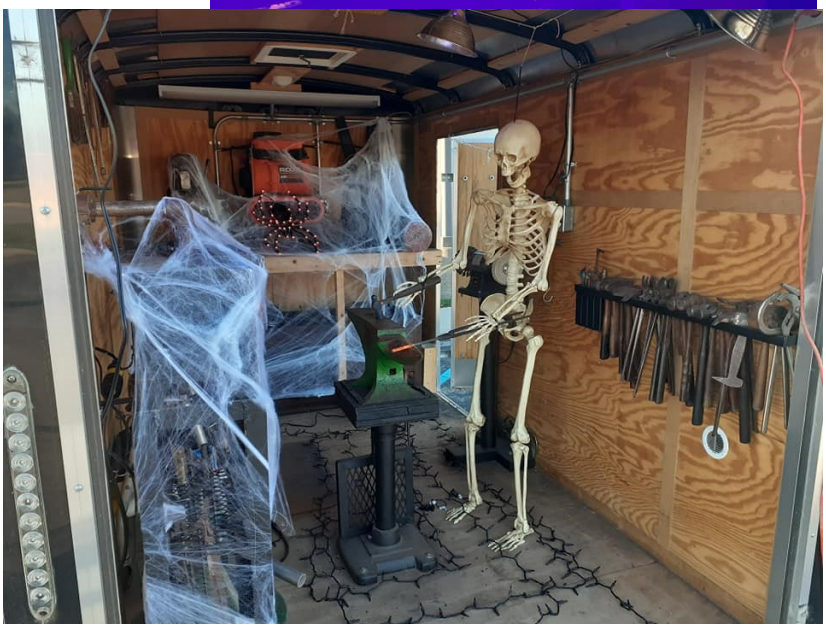
This was followed up by forging 3 scrolls from 4’ 3” of 1/2” square and 2 scrolls from 20” of 1/2” square and then attaching all 5 of these scrolls to the stem using 2 collars of 1/4” X 1 1/2” flat bar following the instructions in Francis Whitaker’s “The Blacksmith’s Cookbook.

Then on to the finishing, I started with “Black Magic” patina that blends in the forged and filed finishes quite well and coated it soon after with “Metal Oil” finish both from Sculpt Nouveau. - Bill Corey

Haunted Halloween Blacksmith Shop

By Brad Weaver

We had a great time last night at the First Baptist Church in North Vernon. They put on a trunk or treat and ours was a haunted blacksmith shop!



Christmas Ornaments

Tim Mann, Arnold

This 2-page article re-printed from the November/ December 2020 issue of the California Blacksmith, the newsletter of the California Blacksmith Association

Several years ago, I was looking for a simple project to introduce"artsy" iron to the students of the welding class at Columbia College. Remembering a demo from the spring conference by Dorothy Steigler of Elizabeth Brim's "blow up technique, I found the perfect project. It does not use much material; few tools easily made, requires some welding, and has the thrill of doing something unexpected with really hot steel. Why not steel Christmas ornaments?

Material needed:
6 ½ " x 5" 22 gauge mild steel ungalvanized
12" ¼ " steel brake line

Tools: 4 ½ " angle grinder, swivel pad vise grip, oxy/acetylene outfit or TIG welder, soft jaws for vise, simple repoussé tools, opener (long round taper with a chisel tip), pitch or lead.

Make a 1/2 pattern on folded paper to ensure both sides are the same. I use a 3" diameter circle with the bottom drawn out to a point and the top curving up to an 11/16" flat where the blow up tube fits and the ornament cap and hook will go.

Math note: Yes I know for a 3/8" diameter hole I only need 1 3/16" of total material, but when you edge weld you will use the extra 3/16".

1. Unfold your pattern and trace onto metal. If you like the pattern and plan to use it again trace onto 26-28 gauge galvanized sheet metal and cut out with tin snips for a more permanent pattern. Rough cut with whatever you use to cut 22 gauge stock to a little beyond the line.

2. Mark one side of each piece "in" so the rest of the steps will be done with the two pieces in the same orientation.

3. Put "in" to "in". Align as best you can, paying close attention to the top flats. Grip in the center with swivel pad vise-grip. Grind both pieces simultaneously down to the line. Split apart and clean up burr left from grinding.

4. On the "in" sides draw what you wish to do for the design. Keep the design 1/4" to 3/8" away from the edge to make the weld easier. Fast and easy is a snowflake, but I have also done Logo's as gifts for suppliers. (Technically this makes it repoussé, but I consider this more of "stamped from the inside")

5. Follow your design with repoussé tools into appropriate backing medium. I use two layers of sheet lead cut to fit like a saddle over an anvil. It works well for simple designs and is available from roofing suppliers and sheet metal shops. For a more elaborate design I would use pitch (wvvw.northwestpitchworks.com) but that would increase cost and time for what is supposed to be a simple project.

Safety note: Do not lick or eat lead, it is not good for you.

6. Realign the two pieces "in" to "in". The stamping process has undoubtedly bulged out the middle, but that is O.K. What you need to look for is how tight the edges come together. Flatten by putting the "in" side on the face of the anvil and pressing in the center with the palm of your hand, or give it a few whacks with your fist. When you have a reasonably good fit, clamp lightly in vise-grip. Fine tune the edges by tapping any gaps closed with a hammer.

7. THE WELD. If you know how to TIG weld I don't need to tell you how to weld this up. For the rest of us an Oxy/Acetylene torch works just fine. A 000 tip in a regular torch or a 1/2 tip in a Henrob will do the job. Set the acetylene and oxygen pressure at 4psi for both types. An edge weld without rod is one of the easier welds to make, but if you have never done one, practice on some scrap 22 gauge to get a feel for it

Tip 1: Always work from thin to thick. Thin being corners or point, thick being middle of piece

Tip2: Keep the bead moving, increase speed as you push more heat ahead of the weld. Try to keep a consistent bead size and weld depth.

Tip 3: Watch ahead of the weld pool for a gap developing. If you see a gap STOP THE WELD! With this thin material, if the sides separate you will have a really hard time making a good weld and will most likely burn off one side or the other. Take the time to tap the edges back together before continuing to weld. (This is a tip I need tattooed on my forehead. I get cocky and figure I can make it work. Boom! Two hours of prep work lost to save one minute of fit up.)

Do not weld across the top of the flat.

Lightly grind any inconsistencies off weld to smooth the edge and "fair" the curves

8. Place ornament between soft jaws in a vise, taking care not to mash the design. Heat area at top flat to red heat and work chisel tip of opener between the sides, then drive it down to create opening for brake tube.

9. Weld brake tube in place. This weld requires welding rod. Heat parent metal to just where it starts to sweat and add a drop of rod. What you are trying to do is plug holes not weld for strength. The weld does not need to be pretty but must be air tight. Check to see if it is adequate by putting air pressure into the ornament. The sides should move a little as you squirt the air.

Safety note: Brake tube appears to be coated (galvanized?) take precautions not to breath fumes.

10. FUN PART. Heat entire ornament to red heat and inflate. I have found that setting the compressor at low pressure gives me more control of this process and keep me from over-inflating the shape. Lightly brush off scale with wire brush.

11. Finish. Leave the tube on for the next couple of steps as a handy handle. With a wire wheel in the grinder take off the rest of the scale.

I normally reheat to a red heat and let cool to get a consistent coat of scale. As it cools you can highlight the design lightly brushing with a brass brush. Finish with a couple of coats of clear gloss finish.

12. Now remove the tube. If you made a crummy weld (desirable) you can rock the tube out. If not place the tube end in a vise and cut off with a hacksaw.

13. Insert ornament cap with hook and you are done.

Merry Christmas to all and to all a good night.

Inflated Steel Ornament
Rocky Harris

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

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Editor's Message:

Due to reduced active membership numbers we are reducing the number of Forge Fire printed copies by 25%. If someone tells you they have not received their newsletter, please ask them if they are still an active IBA member. Membership forms should be available at every satellite group. Forms can also be found on the IBA website (www.indianablacksmithing.org), look in the "membership" page and select "membership application".

If someone is not receiving their newsletter, but believes they are a current member, they should contact Farrel Wells at (765) 768-6235 or email: flwells@frontier.com.

Recently COVID19 infection and hospital rates are increasing both on national and global levels. There are promising reports for a vaccine in the not too distant future. At this point in time we are still urging members to exercise caution in any public forum, including hammer ins.

Be sure to check out Bill Corey's candle holder on pages 4-8 of this month's issue.