

BOARD OF DIRECTORS

Gary Phillips '18 President:
14800 N SR 167 N
Albany, IN 47320
(260) 251-4670
behere@netdirect.net

Steve King '18
1155 S. Paoli Unionville Rd
Paoli, IN 47454
(812) 797-0059
kingknives@live.com

Bill Conyers '19 Vice Pres
50964 Lilac Rd,
South Bend, IN
(574) 277-8729
billconyerssr@yahoo.com

Bill Newman '19
4655 Williams Rd
Martinsville, IN 46151
(317) 690-2455
ruralsmiths1@yahoo.com

James Johnston '17
Education Chairman:
806 Twyckingham Lane
Kokomo, IN 46901-1885
(765) 452-8165
kokomoblacksmith@comcast.net

Keith Hicks '17 Secretary:
5184 State Road 252
Brookville, IN 47012
(765) 914-6584
keithhicks2011@gmail.com

Jeff Reinhardt '20
2810 W. Riley
Floyd's Knobs, IN
(812) 949-7163
preeforge@aol.com

Dave Kunkler '20
20749 Lancaster Rd.
Branchville, IN 47514
(270) 945-6222
dwkunkler@yahoo.com

Librarian:
Larry Rosenthaler
8715 E. 375 N
Churubusco, IN 46723-9501
260-693-3267
lrosenthaler@gmail.com

Editor:
Bill Kendrick
1280 N 900 W
Seymour, IN 47274
(812) 445-3009
bill.d.kendrick@cummins.com

Treasurer and membership secretary:
Farrel Wells
8235 E 499 S
Dunkirk, IN 47336-8807
(765) 768-6235
fwells@frontier.com

Awards Chairman:
Charlie Helton
2703 South Water Plant Road
Westport, IN 47283
(812) 591-3119
heltoncs@frontier.com

August 2016

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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IBA MEETING SCHEDULE

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

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



INDEX

PGS 3-6
SATELLITE NEWS

PG 7
QUENCHING

PG 8
SOCKET TO ME

PG 9
CORNER MOUNTED BRACKETS

PGS 10-11
POST SOCKET DEVICE

BACK PAGE
EDITOR'S NOTE

Dates to Remember

Aug 5-21
Indiana State Fair

Sept 9-10
Heartnut Festival
(Rural Smiths) at
Johnson County
Park

Sept 23-25
Quad State SOFA

Simple Backing Tools For Setting Collars

Jim Carothers

Sometime back I noticed in Saltfork Craftsmen member Gary Gloden's shop a pin welded to a layout table.

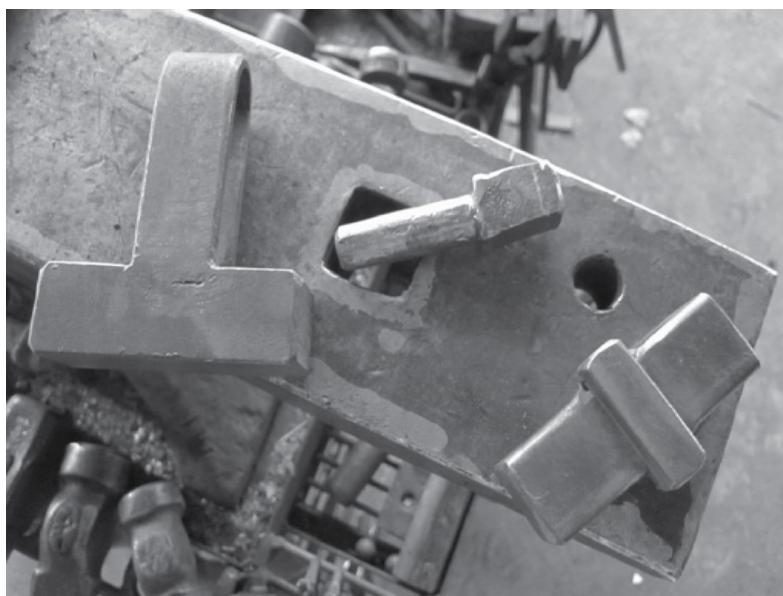
Gary was using this as a backing bar for setting hot collars on a then current project. The 5/8 to 3/4" size pin let him set collars in tight areas.

Most of my collar work has been on small things like a kitchen trivet that I

can assemble on my anvil face.

The attached photos show some simple hardie and pritchel tooling used as backup bars for setting hot collars.

This article reprinted from Alex Bealer Blacksmith Association newsletter, June 2016 edition



Visit the IBA website at: www.indianablacksmithing.org

IBA Satellite Groups and News

1) Sutton-Terock Memorial Blacksmith Shop

Meet: 2nd Saturday at 9 AM
 Contacts: Fred Oden (574) 223-3508
 Dennis Todd (574) 542-4886

3) Wabash Valley Blacksmith Shop

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

5) Maumee Valley Blacksmiths

Meet: 2nd and 4th Saturday
 Contact: Clint Casey (260) 627-6270
 Bruce Teegarden (260) 226-1722

7) Rocky Forge Blacksmith Guild

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

9) Whitewater Valley Blacksmiths

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

11) Bunkum Valley Metalsmiths

Meet: 1st Saturday
 Contacts: Jim Malone (812) 725-3311
 Terry Byers (812) 275-7150
 Kathy Malone (812) 725-3310

13) Satellite 13

Meet: 4th Saturday
 Contact: Bill Newman (317) 690-2455

2) Jennings County Historical Society Blacksmith Shop

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

4) Fall Creek Blacksmith Shop

Meet: 4th Saturday at 9 AM
 Contacts: Gary Phillips (260) 251-4670
 Dave Kline (765) 620-9351

6) St. Joe Valley Forgers

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

8) The Southern Indiana Meteorite Mashers

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

10) One-Armed Blacksmith Shop

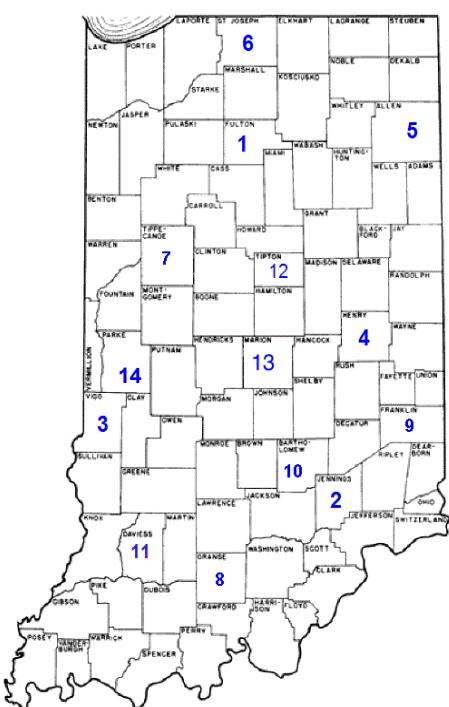
Meet: 1st Saturday
 Contact: Tim Metz (812) 447-2606

12) "Doc" Ramseyer Blacksmith Shop

Location: 6032W 550N, Sharpsville, IN 46060
 Meet: 3rd Sunday at 2 PM
 Contacts: Charles Gruell (765) 513-5390

14) Covered Bridge Blacksmith Guild

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



The Southern Indiana Meteorite Mashers

This month we met at Historic Beck's Mill near Salem Indiana. Good turn out on a hot and often rainy day. Had both the shop forge and a demo trailer forge going for most of the day. Good lunch, good friends and lots of blacksmithing as usual.

Our August meeting will be on the 27th again at Beck's mill, and Beck's Mill will be having a 100th birthday celebration so venders and lots of visitors.

Reminder: Schwartz Steel farm machinery auction on August 20 in Berne, IN. Auction details available at:

www.town-countryauctions.com

IBA Satellite Groups and News (continued)

Bunkum Valley Metalsmiths



The Bunkum Valley Metalsmiths held a meeting on July 2, 2016. It was a beautiful day. We had around 30 people in attendance. We had a wonderful lunch with fresh green beans and homemade ham salad. Really great banana split dessert cake. Thanks to everyone that brought food.



Aaron made some long tongs. Also Jerry made a knife to be raffled off to help raise some money for kidney disease.

We hope to see everyone at our next meeting.



IBA Satellite Groups and News (continued)

St. Joe Valley Forgers

Even though it was a very hot day when the St. Joe Valley Forgers met for their July meeting we had 14 attendees, including one first timer. In addition to making sure that we remained hydrated we were able to work on a number of projects. Dan Semple demonstrated how to make steel roses.

In August the St. Joe Valley Forgers will be demonstrating on twice. One of the events will be the South Bend Art Beat on August 20th from 11 am to 7 pm. If your in South Bend on August 20th please stop by.

Mark Hohulin Reporting

Jennings County Historical Society Blacksmith Shop

6/11/2016

A small group went and picked up a A 25-LB Little Giant and delivered it to North Vernon blacksmith shop.



7/9/2016

The group put the hammer on the base this morning and bolted it down. They tested it and it is now up and running. The group discussed and the ones that has pass the safety course, will be sure and get with the ones that have not and teach them so all will be able to use it.

As should be Safety is first.

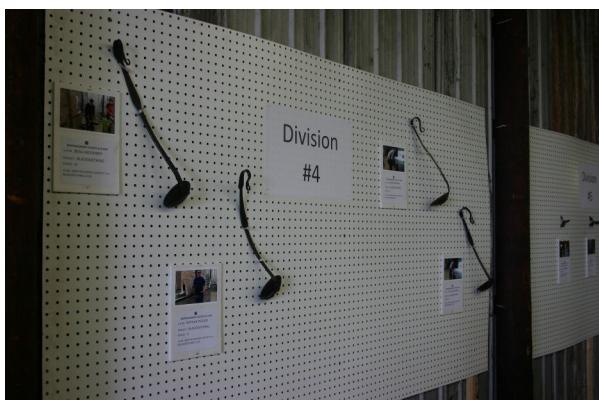
Then Charlie announced Alex being the Rookie of the year and gave him his Award, hat and cheered him on.
Congratulations Alex.

Alex made a hammer with help from Ray S, Charlie, and Jack. Leelynn show Wayne how to make a S hook and he made a flower. Wayne made an S hook with Leelynn helping him.

Note: Several members went to the Bartholomew County Fair to demonstrate and to forge some hardy tools for the 4-H group. Photos on the following page.

IBA Satellite Groups and News (continued)

Bartholomew County 4-H Fair (One-Armed Blacksmith Shop & Jennings County Historical Society Blacksmith Shop)



METALLURGY— QUENCHING



The most important step in hardening steel is the quenching process. This step is the fast cooling that locks the elements into positions that create stresses in the steel that strengthen it. There is a lot that happens in a short time. If not performed properly, this can cause a number of issues. A lot of study has been done about controlling this process, and how to design it for specific applications to successfully achieve sound parts with the needed properties. This month we will discuss the types of quenchants, the reason for the different quenchants, and the parameters that affect the performance of the quench.

The most important parameter of the quench is to set up the severity of the quenchant. Water is the most severe quenchant. It is one of the oldest and least expensive quenchants. As the hardenability of the steel, or DI increases, a water quench can cause distortion and cracking. This forms the need to use a less severe quench. A large range of quenchants offer a variety of quench severities. These include oil as the least severe quenchant, and polymer falls in between these two extremes.

Each category—water, polymer, oil—can have the severity adjusted. For water, the adjustments include: hard or distilled, brine solution, and temperature. Polymer is adjusted by the concentration or percent of polymer in the water. There are different types of oils: normal, medium, or high speed. These categories and adjustments form all the choices available to design an optimum quench for the grade and geometry of steel to prevent distortion and cracking.

Besides the quenchant, there are a number of adjustments that can be made to the quenching process if difficulties are encountered. Agitation is very important to minimize the vapor barrier that forms around the hot steel in the quenchant. This vapor barrier, if not removed by a flow across the surface, acts as an insulator that slows the quenching process. When that happens, the part does not reach the required as-quenched hardness. The temperature of the quenchant also plays a role in the severity of the quench. Increasing the temperature of the bath will slow the rate of heat flow from the steel. One of the driving factors in how severe is a quench is the difference in temperatures. A furnace with good controls can be used to lower the austenitizing temperature while ensuring that the part is austenitized.

The quench process offers a diverse selection of parameters to ensure that a solid and uncracked part is obtained before tempering. When difficulties are encountered on a particular part, there are some changes that can be done before changing to a different quenchant.

Ross Wilkinson, BOA Metallurgist



Socket To Me!- By Don Pfaff

PAABA and WRABA member, Don Pfaff, has come up with a great way to make a "better hook bender"! If you want to fabricate tooling for making hooks, you may have several such as: one for big hooks, small hooks and in between. But wouldn't it be great if you only had to make one....and be able to interchange it? That is ex-actly what he has created. Use a round disc as the base plate and weld on a square post to fit in a vise. On the top, weld on a 1/2 inch post to fit interchangeable sock-ets. Add a hold back made from small angle and attach to outside. Small hook, big hook...no problem, you can be ready for all with a change of a socket!



This article reprinted from Pittsburgh Area Artists—
Blacksmiths Association newsletter, July 2016 edition

Blacksmithing Coal (from Charlie Helton)

Smithing Coal is a type of high quality bituminous coal ideally suited for use in a coal forge. It is free from ash, sulphur, and other impurities as possible. The constituents of the coal should be as follows:

Constituent	Percentage
Sulphur	Not over 1%
Ash	Not over 7%
Carbon	Not less than 70%
Moisture	Not over 12%

Corner Mounted Brackets By Bill Kirkley

This article reprinted from Philip Simmons Artist Blacksmith Guild newsletter, July 2016 edition

Recently, I made four brackets to mount on a 4X4 post. Most brackets are made to mount on a flat surface. I decided to mount these on the corners of the post.

The brackets were made using 3/8 inch square bar. One end is flattened. The flat is bent ninety degrees so it will fit on the corner of the post. The first bracket was made by hammering the flat into a piece of angle iron using the cross peen of my hammer. (Figure 1) It was finished by hammering it on the edge of the anvil. This took time and, because of my limited skills, wasn't as good as I would have liked. If I had a striker I could have used the angle iron as a swage, and a square bar as a fuller.

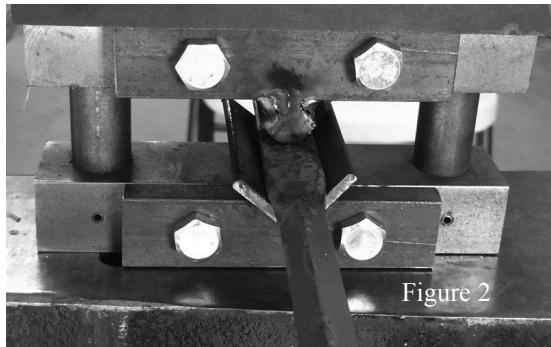


Figure 2

As an alternative I used my guillotine. I made a top die out of square bar and the bottom out of angle iron. (Figure 2) It took two heats to produce a nice result. (Figure 3)

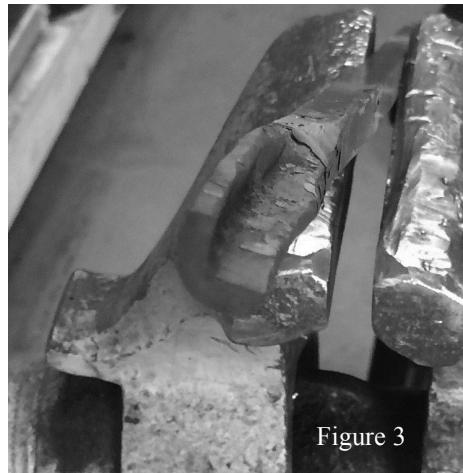


Figure 3

At this stage the bracket cannot be mounted because of the material that encroaches on the angle bend. (Figure 4) This is addressed by bending the mounting portion of the bracket away from the rest of the bracket. (Figure 5) There is still some material in the way that is removed with an abrasive .045 inch cut off wheel. (Figure 6) A file would also do the job. The screw holes are offset to make mounting the bracket on the post easier. (Figure 7)

The bar is tapered and bent to the desired shape. The brackets mounted securely to the post using two screws. (Figure 8)

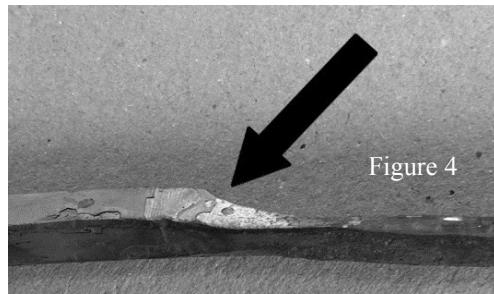


Figure 4



Figure 5



Figure 6



Figure 7

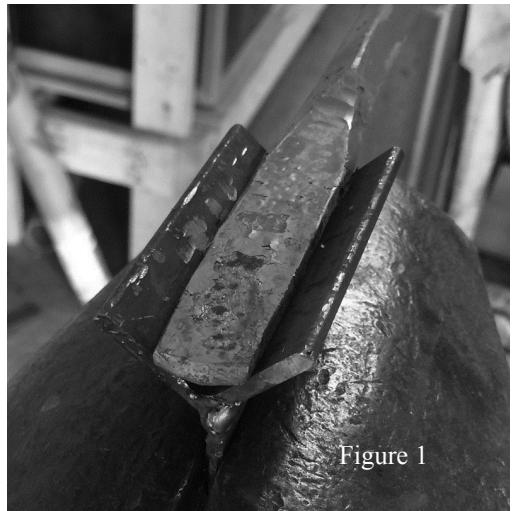


Figure 1

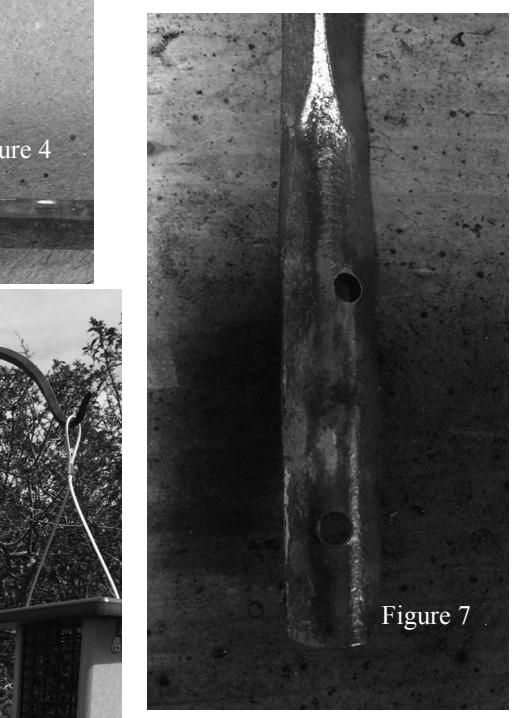


Figure 8

PROJECT NOTES—A POST-SOCKET ACCESSORY FOR BLACKSMITHS

Author: Robert Fox, Blacksmith Organization of Arkansas.

Oddly enough, this ride started with a 4-1/2 inch grinder. A hand-held grinder is a very helpful thing to have around the shop. I bought one on sale at the local discount tool store for about \$14. I could have saved another 20% if I had waited for a coupon, but at that price, the additional savings wasn't really worth the gas it would take to drive back out. I also bought an accessory kit that included a pack of cut-off wheels, grinding wheels, flap disks, and a wire cup brush.



All of these accessories got a lot of use, but it was a real pain to have to keep changing them out. Within a few weeks, I had made another trip to the store and purchased 3 more grinders, so I could have any of the accessories ready at hand at any time. Well worth the cost!

But this experience got me thinking about other irritating aspects of my shop.

I am 53, and, while still grateful for good health, there are times when my eyes need to be closer to the anvil than my back is comfortable sustaining. I don't like burning up my anvil-stump using it as a dishing tool for hot metal. I understand that you need to remove your cut-off hardy before you hammer on the anvil, but it's irritating to have to keep swapping it in and out.

So I got the bright idea to build an "annex" for my anvil—a place I could set up for some aspect of smithing that is usually performed on the anvil, leaving my anvil free for forging, and reducing the need to constantly swap various tooling in and out.

When I bought a 6x6 treated post for my post-vise years ago, the minimum length was 12 feet. I think they carried 10 foot lengths, but were out at the time. The ground here is sandy soil, but even after sinking the post for my vise over two feet deep, I still had a good long length of 6x6 left over.

Tim Hutchinson then came across a stack of elevator weights which he generously distributed to those who came to a meeting he hosted at his forge. These weights are cheap soft steel, whose only required metallurgical property was that they fit in the elevator weight basket, and weigh exactly 20 pounds each. They are VERY mild steel, and coincidentally almost exactly the width of a 6x6 post. Three minutes with a cut-off disk (love my grinders!) and I had two 1" thick plates perfectly sized for my posts.

At this point, the concept of a post-socket was pretty obvious. I can't say I invented it so much as just watched it happen in front of me.



I had a large quantity of heavy gauge sheet metal from a water heater replacement (broken down in no time with that cut off wheel). You'll notice a recycling theme here.



I came up with a design I liked that had some depth and layers, not only for aesthetics, but also for additional strength. A few minutes with the cut off wheels, a jigsaw, and some files, and I had if all cut out. I left it a little long on one end in case I needed a little slack.

Of course, when you have a project that's a little too much to wrestle around by yourself, you bring it to the next chapter meeting. In my case, that happened to be a meeting at Tim's forge.

Tim is an excellent smith with a great forge setup and some serious welding skills. It took almost no time at all before Tim gave me that "Bless your heart, let me do it for you" look, and took over the task of heating and bending the sheet metal.



Now one thing you may not know about steel water heater tanks is that they are coated on the inside with what looks like a glossy enamel, but is actually a thin layer of glass—glass which spalls off in hot shards when you heat it with a torch. Tim, you're a good sport, dude! I can't even see the scars now.

We formed it around a short section of 6x6 (left) to make sure it was the right size. In fact, the fit was so tight I found it easiest to just burn out the wood.

I mounted it on the post with about 2-1/2" of socket above the top of the post, and wrapped it with a metal strap. The top of the strap is even with the top of the post.



I had also bought a long 3/4" auger bit at that discount tool store, and used it to drill a hole down the center of the post, and to drill and chisel a rectangular hole through the post below the socket. I did this for two reasons, to allow any built up water or dirt to drain out, and to provide a way to "lock" a tool into the socket if needed. I made a hook out of a short piece of coil spring, with a slot for a wedge. To make sure the hook passed freely through the hole in the post, I heated it to cherry-red and burned the hole to fit.



At this point, I only had enough 6x6 left for about three socket tools. I decided what I needed most was a second hardy (7/8", to fit all the tooling made for my anvil), a cutting plate (perfect use of that mild steel), and a disposable burning block. I drilled and countersunk the metal plates for some 3" wood screws, and applied some indoor/outdoor caulk before I screwed them on, to reduce noise. The hardy hole was drilled out in the corners and chiseled out—a surprisingly easy task with mild steel and some cold cut chisels. It was still a little snug for some of my tools, but at this point, I hosted a meeting at our forge, and Tim grabbed a big file and cleaned it up in no time. Actually, Tim probably did more of the work that I did. I supervised...

Anyway, now I have a handy extra hardy I can leave set up. I have a burning block I can toss when I'm done. And I have a cutting plate, which I have to admit is also really handy for up-close work without straining my old back over the anvil.

For some reason I've always wanted to make a little nailmaking station like they have at Colonial Williamsburg, and am currently digging through the scrap pile for just the right material. A similar station would allow me to make rivets very quickly and consistently. I'm also sketching designs for a foot-lever hold-down tool for the cutting block, to make it easier for a one-man operation. And if Tim comes up with any more elevator plates, I want to make one with lots of holes for a universal bending jig. I've got pages of sketches of accessories for my new post-socket.

I've also considered making socket bases for my grinder, chop-saw, and Beverly shear. I have a little table, but it is often in use, and the shear, in particular, really needs to be locked down. After playing around with engraving at Larry Layne's this month, I really want to make a pitch-pot socket tool. In fact, I'm considering making a second socket, mounted a little lower, where I can do lengthy detailed work while seated.

I've learned a lot from this little project (as has Tim). Every bit of it was scrap, so it didn't cost me a dime, and it's surprisingly handy and multifunctional. It's remarkable how much difference it makes to have the right set up instead of trying to "get by" with tools you've inherited. I've found it really pays to spend some time on the infrastructure of your shop. Make the tools you need to make the stuff you want. Or get Tim to make them!



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

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

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Editor's Message:

I am a little light on news this month, so I decided to move to the back page and free up space for an added article. I hope you find the collar backing tool interesting and useful.

Currently I am not aware of any scheduled IBA hammer ins. Our August hammer in is essentially being covered by the Indiana State Fair that runs August 5-22. If you are interested in hosting a hammer in, please contact Gary Phillips at (260) 251-4670. Gary would love to hear from you.

I am seeing a great number of posts on the IBA Facebook page regarding fairs, festivals and shows. If you are in need of extra blacksmiths to support a local event, feel free to contact me for posting in the Forge Fire, or post directly to the IBA Facebook page.

In July the One-Armed Blacksmith Shop and the Jennings County Historical Blacksmith Shop teamed up to demonstrate at the Bartholomew County Fair. Tim Metz has been working for many months to establish the 4-H blacksmith program in Bartholomew County. The culmination of his effort is a four forge demonstration area in the Heritage Arts Building. The forging area is beautifully laid out and surrounded by a stock gate fence that provides excellent viewing while keeping spectators at a safe distance. Some of the demonstration work included forging hardy tools with strikers. Hand forging with striking hammers definitely caught the eye of the crowd. Take a look at page 6 to see some of the 4-H projects as well as some of the IBA demonstrators. I know several other counties have active 4-H blacksmithing programs. Hopefully we will see some of that good work as well.