March 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.

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 21 2020	**ANNUAL BUSINESS MEETING KELLEY FARMS**
Apr 18 2020	**JEFF REINHARDT**
May 16 2020	**SNAKE ROAD FORGE**
Jun 5-7 2020	**IBA CONFERENCE**

INDEX

Dates to Remember

March 21 Annual Business Meeting at Kelley Farms

June 5-7
IBA Conference

Editors Message

As I am drafting this month's Forge Fire, Corona virus is dominating world events. Large gatherings are being discouraged, resulting in postponements or cancelations of major sporting events and extended school break periods. Clearly the virus is deadly, particularly for older people, and highly communicable. Exercise caution in your day to day activities. If you have symptoms or if you have recently been in contact with someone who is now showing symptoms, please refrain from attending public events, including hammer ins. Rocky Forge has canceled their March hammer in. ABANA is monitoring the situation relative their 2020 Conference

ABANA statement:

> As the circumstance surrounding the coronavirus COVID – 19 continues to evolve we remain vigilant in keeping abreast of the latest information. In order to prepare for future action, if necessary, the Governor of New York has now declared a disaster emergency. This declaration may result in the necessity for us to change our plans in the future, however at this time, there are no plans to cancel the 2020 Conference. As circumstances change we will make every effort to communicate the situation in a timely manner.
>
> As a precaution we suggest that conference attendees planning to fly to the conference take out trip insurance, in the event that the conference is cancelled.
>
> Meanwhile, we will be reaching to officials from the Washington County Fairgrounds and Local Emergency planners in in order to get the most recent and up to date information for the area and to formulate any plans necessary for the conference

On a brighter note we have a slate of hammer ins scheduled. Note the May hammer in will be hosted by our newest satellite group, Snake Road Forge. That will be a good opportunity to visit with them.

IBA hammer-in dates for 2020

March	Kelly farms, business meeting
April	Jeff Reinhart's shop
May	Snake Road Forge
June	IBA conference
June 27	Mark Aspery will be at the Rocky Forge Blacksmith Guild
July	TBA
August	St. Joe Valley Forgers
September	TBA
October	TBA
November	Covered Bridge Blacksmith Guild
December	Don Ritzel's shop (second Saturday in December)

Jim Johnston has been under the weather for several weeks (not corona virus), but he has been working on the IBA Conference. Nathan Robertson will be our featured demonstrator. Nathan will be showing power hammer tooling and techniques with flat dies.

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

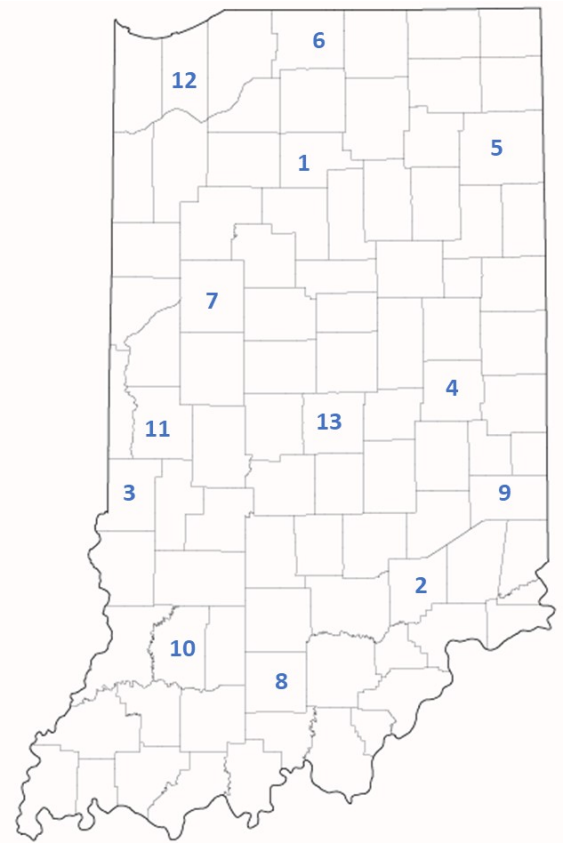
2) Jennings County Historical Society Blacksmith Shop
Meet: 2nd Saturday at 9 AM
Contact: Ray Sease (812) 522-7722

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

Jennings County Historical Society Blacksmith Shop

The Jennings County Historical Society Blacksmiths met at the forge of Kenny Dettmer on the 8th for our regular meeting and again on the15th for the state meeting. Kenny is a very gracious host and we thank him very much for his hospitality. Dave Good drew out a hammer drift from hardened steel, then took a bar of wrought iron, folded it and forged welded a blank to make a hammer . We had a very profitable iron in the hat.

The next meeting will be at Kevin Welsh's forge, 25619 Gill Rd. , Nabb IN 47147. April will be back to Vernon. Kevin always has a great turnout so dig out the corners of your shop and bring that stuff that has been laying around to iron in the hat. (And your money)

Paul Bray

IBA Satellite Groups and News (continued)

Meteorite Mashers



The Meteorite Mashers met at Jason Bowman's shop in Elizabeth this month. Jason had a major water leak and flood in his shop this week yet had it fixed and cleaned up in time for a great hammer-in. Mike Mills did you usual great job with the beginners, and Jason even shared his very smooth running Fairbanks power hammer. Steve King was also working with a beginner he brought. Maddie King brought her now famous warm smile. Next month's meeting will again be at Jason's shop. April's meeting will be a state hammer-in at Jeff Reinhardt's shop in Floyds knobs on the third Saturday of the month.


Which Fork Do I Use?

Atticus used the fork seen on the left for a number of steps during his demonstration. The benefit of the uneven "tines" is that you can bypass the one tine when wrapping, a great benefit. You can use this fork in an anvil. The fork design below is one we use at Steel Welding. It can be used in a vise. The advantages are it also has uneven "tines" and a loop which keeps metal in place. Good for keeping material from slipping. The third fork, is an adjustable fork. This can be used in a vise for different size material. No matter which fork you use will help you finish your project!





Forks on the left are on separate pieces of angle iron and can be moved closer or father away from each other to accommodate the project you are working. Make sure the welds are secure and the angle iron is the same. When working with different size material it requires different spacing between the upright posts. You can also place a piece of pipe over the upright to make a larger pin.

The above article reprinted from the March 2020 edition of the Pittsburgh Area Artist — Blacksmiths Association newsletter

IBA Satellite Groups and News (continued)

Snake Road Forge

We had a great time here at Snake Road Forge up here in Porter County last February 1st. We had 8 show up and one of them was a new gal named Grace. She came all the way from Kankakee Illinois. She's a talented welder with the 597 Pipefitter Union, so she already has experience working with steel but had never blacksmithed before. I had her try her hand first time on a decorative hook. She did a great job for her first effort. Bill Cain pretty much finished his railroad spike knife that turned out very nice. Mike Mi-hich made a spike knife and George also made one. We had a tasty Chili lunch made by my wife. Oh almost forgot Peter Hastings made a beautiful hammered cross out of a 3/4 by 10 inch square stock. Our next hammer-in will be Saturday March 7th at 9:00 am till 3:00 pm. Hope we will see some new faces thanks and have a great week! Forge master Rod Marvel

Here are some pictures from Snake Road Forge from our March hammer-in. We had two very experienced blacksmiths come. Russ Jansma and Tom Willoughby gave a demonstration on how to make cutting and punching tools. We also had three new first time attendees who actually did great on their projects. One had never black smithed before. We are looking forward to hosting the state hammer-in here on May 16th hope you can make it

Anvil Restoration

© *Robb Gunther and Karl Schuler*
The Forgery School of Blacksmithing

published in ***ANVIL Magazine***, April 1998

This process works well on wrought iron base anvils and cast iron base anvils with a good tool steel top. It was developed with the help of several metallurgists and welding engineers at Sandia National Laboratories.

Grind all surfaces to be welded.
Expose good, clean material. Grind through all folds or fractured chips. Chamfer any holes or severe depressions in preparation for welding.

Preheat a wrought iron base anvil to 400 degrees and a cast iron base anvil to 450 degrees. The temperature can be verified with a Tempil Stick crayon available at Your welding supply store, which melts at a given temperature. (i.e., 350 degrees, 400 degrees, 450 degrees. A propane-fired weed burner works well to preheat the anvil. A wood fire call also be used if care is taken to wire brush off all carbon and smoke deposits before welding. Be careful to not overheat the anvil, particularly the heel and hardy hole area, as it's a thinner cross-section and heats faster than the more massive parts.

What You'll Need
If your anvil has a wrought iron base and the damaged area goes through the tool plate so that You have to begin the repair by welding to the wrought base material, use Stoody 2110 (or equal) 3/16" rod (DC reverse works best; however, it will run AC); Unlimited passes. Expect 45 Rockwell C as welded. When you can finish building up the repair area **in no more than three passes** (or layers thick), use Stoody 1105 (or equal) 1/8" rod (DC reverse, or AC); expect 50 to 52 Rockwell C as welded, which should be consistent with the original hardness of the tool plate. The Stoody 1105 is a particularly good match for the W-1 tool steel tops of most anvils and is designed to be impact resistant.

Cast steel anvils repair well using the combination of the Stoody 2110 and the Stoody 1105 (last three passes).

Repair to the Horn

Repair to the horn of a wrought iron base anvil can be accomplished with 6010 welding rod as needed. If the point of the horn is blunted or slightly broken off, we usually Put the end of the horn in a coal forge, heat it to bright orange and forge it out to the desired shape using a 12-lb. sledge to back it up and a 2-lb. rounding hammer on top. Repairs to the horn of cast iron anvils is usually done by welding with the NI rod and grinding.

If the area around the hardy hole or pritchel hole needs repair, weld using the above detailed process; however, inserting a chill (or form) made of 1/16" sheet copper into the respective hole before welding will save you a lot of grinding and filing to true up the hole.

These hard surfacing rods used here to repair anvils are quite gravity sensitive during the welding process. If you can lean the anvil at 45 degrees against a cinder block while welding on the edges, you will have more of the somewhat expensive welding rod on the anvil and less on the floor.

After all welding repair is complete and you are sure that there is sufficient buildup to allow for grinding to the desired finish (check with a straightedge), post heat back to 400 degrees or verify with the Tempil Stick that the anvil is still that hot from welding. Pack the anvil in vermiculite (crushed mica), available at most nurseries, to allow it to slow cool for a minimum of eight hours. This will minimize the potential for stress cracking from welding.

Obtaining the Desired Finish

Grind the anvil to the desired finish. We start the grinding process with a 24-grit cup stone on a large-body grinder It is quite aggressive at quickly removing metal. Be careful to keep it running flat (sparks coming off both sides of the cup stone). Continue the grinding process using flex back metal sanding discs, starting with 24 grit and working down to 240 grit, in five or six steps. Until now, all edges should be kept sharp and square. With 100 grit or finer sanding disc, radius the edges to your desired shapes. Near the anvil step the radii are typically ground to a 3/16" or 1/4" radius and tapering to nearly no radius at the heel of the anvil. The edge of the step and the heel are usually left rather sharp and only broken with a file. A final polish call be done with a *Scotch Brite* disc and you can usually see your face in the anvil top.

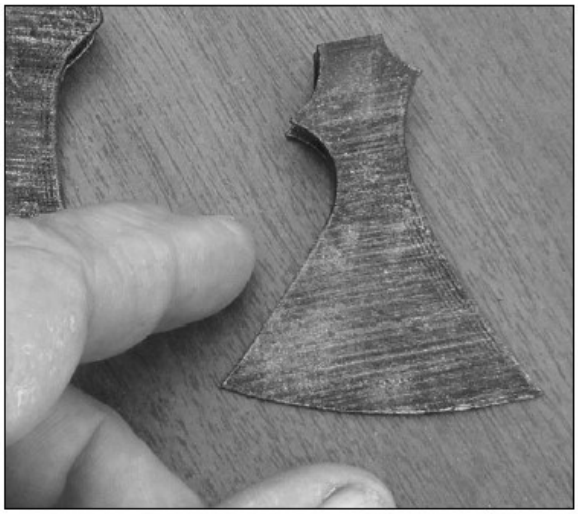
This anvil restoration process has been used on several hundred anvils around the country with great success.

This is a great article that has withstood the test of time. I first saw it in 1998 when it came out. But remember that many anvils do not need to be welded up, especially if you are not a great welder. If you need a square edge, a anvil block is often the answer rather than an experiment on an antique anvil that is very usable as it is. For most of us, that old anvil with a chip or two out of the edge isn't going to affect your finished product. I had a great anvil– Haye Budden, that was a bit worn on the edges. I gave it back to the granddaughter of the original owner as she was going to be blacksmithing. It was hard to do. The first thing she did was to have her boy friend "run a bead down the edges..." Not good. Barry

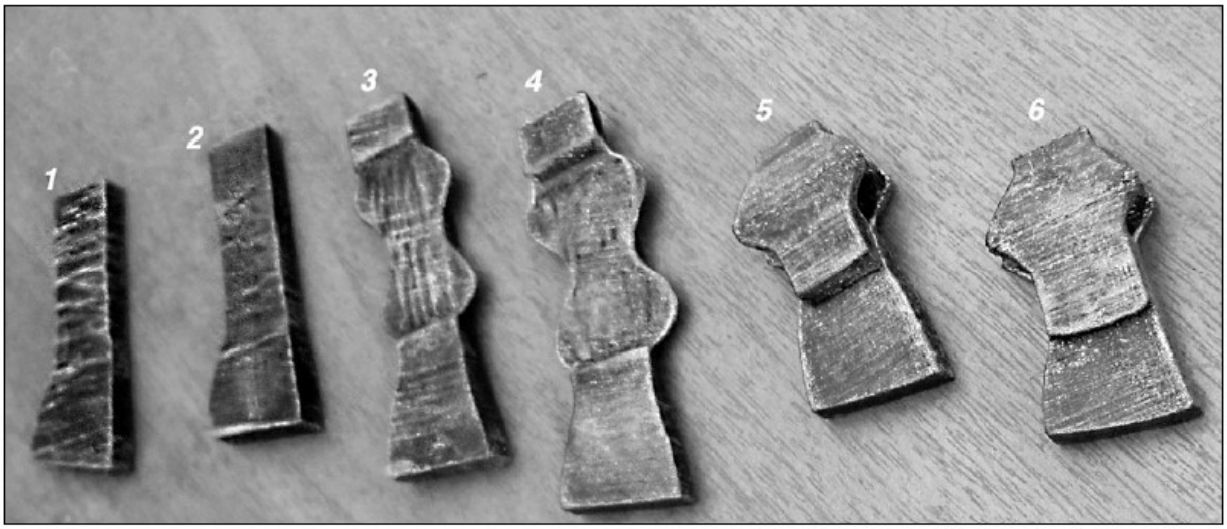
Asymmetric Folded-Eye Axe

Photo Essay of Demonstration Models
Jim Austin, Shown at Oktoberfest

This article presents an interesting combination of modern and historical technologies: the models were made by 3D printing from CAD models.



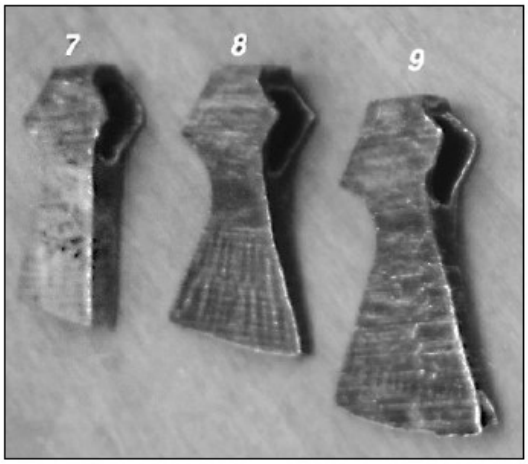
1. Roughly draw tapered blank from original stock.
2. Fuller to separate material for eye (cheeks and poll).
3. Fuller cheeks of eye crosswise to long axis of axe. Thinning the cheeks created the interior of the eye when the axe is folded.
4. Finish forging the cheeks to make them symmetrical (length and width).
5. Fold eye closed.
6. Forge weld.



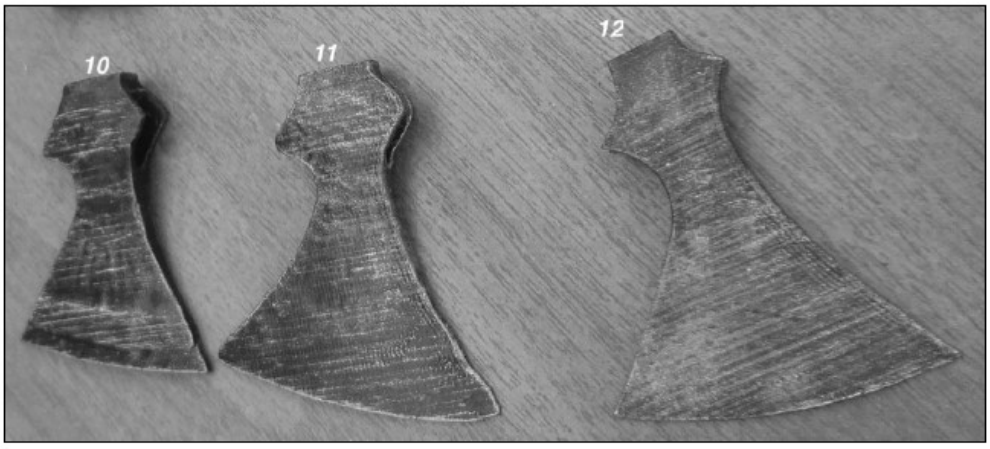
This two page article is reprinted from the March/April 2020 edition of the California Blacksmith, the newsletter of the California Blacksmith Association.

Folded-Eye Axe

7. Draw weld down to make a smooth transition from the eye. Use mandrel to finish interior form of the eye.
8. Cross peen to spread blade of axe to about ⅜" thickness.
9. Cut, taper and open a cleft for high-carbon bit.



10. Insert and weld bit.
11. Draw out blade to finished profile and thickness.
12. Clean up and enjoy!



These were all 3D printed models of the steps in the process. Whitney Potter made the original scans (at Orchard Supply in San Mateo), which were then turned into printable models. The models could have been printed at any scale; these are in one-third scale. Whitney had the models printed and delivered to Jim by a 3D printing service called Shapeways. The digital models are proprietary.

For more information, visit forgedaxes.com or take a class from Jim. ♣

A Simple Twisting Wrench

You see them everywhere these days. A common pipe wrench, usually antique, that has had an auxiliary handle welded to it. Twisting wrenches are almost as common as tongs in modern shops. Funny thing, though. When you look at the photos of old shops, or go through the inventories, you almost never see these (I'd say "never," but guaranteed that if I did, some wise guy historian would go off and find the single example of these in history just to prove me wrong - yes, Kronberg, I'm looking at you. So, "almost never" it is.) You find pipe wrenches, to be sure, but not ones with the extra stub added to them. I wonder why?

Left: An example of this type of twisting wrench. This one is much longer than it needs to be; I'll probably cut it to about half the length whenever I get around to it. The loop opposite of the working end is for hanging it up when not in use.

There's another way. Actually several other ways, but this is the one we use in my shop. A simple twisting wrench that takes almost no time to make. I usually make mine from 3/8" square stock, because I have a lot of 3/8" scrap. Heavier would be better, especially if you're twisting something bigger than 3/8". On one end of the bar, make a lazy hook, folding it back on itself but leaving a gap about the width of the thickness of the stock you're going to bend. (In other words, if you're making a wrench to twist 3/8" stock, leave a "gap" a little more than 3/8".) Tighten the bend up around a mandrel (piece of stock the size you'll be twisting) — you can do this with the hammer, vise, or both—but don't make it too tight. You need a tiny amount of play, just enough to let the wrench slide on and off the stock. Remember, too, that the stock is going to be hot when you're twisting, and heated metal expands.

Right: Detail of the working end

Once you've tightened the bend, et voila! You're done. Now, I grant you, this type of wrench isn't adjustable like the pipe wrench. So, make several in all the different sizes you usually work. You'll have them right at hand, and not have to worry about adjusting the wrench every time you move to different size stock.

"But Jerry!" you say,"This design only has one handle! We need to have that auxiliary handle to get an even twist!" Well, no, you don't. What you *need* is practice. But I grant you, having that extra handle can make things a little easier. So, OK. Instead of making your hook on the end of the stock, make it in the middle. Then, make another bend going back the other way, essentially creating an S. Make the 2 hooks to fit 2 different sizes of stock.

Building wrenches like these is something well within the reach of anyone with the most basic forging skills, helps builds those skills, is a great way to make scrap useful and will save you money. And you won't embarrass your pipe wrench by making it dress up like a narwhal.

Left: An S-shaped twisting wrench for 2 sizes of stock. This one is sized for 1/2" & 5/8".

This article reprinted from the March 2020 edition of The Virginia Blacksmith, the newsletter of the Central Virginia Blacksmith Guild

More Twisting Alternatives—*a photo essay*

From the CVBG April 2019 meeting; Let's Do the Twist! demo by Bruce Manson

Photo credit: Jim Hotinger

Right: Turn your tongs into a twisting wrench by clamping the stock between the reins

Bottom: A twisting machine for hot or cold steel. Cold twisting long stock can be more uniform compared to heating and twisting in multiple heats

Below: Bruce demonstrates another way of turning tongs into a twisting wrench, by grabbing the stock in the jaws, then inserting a small bit of stock to make an "auxiliary handle."

This article reprinted from the March 2020 edition of The Virginia Blacksmith, the newsletter of the Central Virginia Blacksmith Guild

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
If Undeliverable return to
sender

March 21 IBA Business Meeting

Kelley Farms / Doc Ramseyer Shop

6032 W 550 N Sharpsville, IN 46060

Located just west of US-31. Approximately 6 miles north of SR-28 (Tipton) or 3 miles south of SR-26 (Kokomo).

Please bring a dish to share

April 18 IBA Hammer In

Jeff Reinhardt Shop

2810 W. Riley, Floyd's Knobs, Indiana

Driving directions: From I-64 take exit # 119. Take first right onto Old Vincennes Road. About 0.7 mile turn left onto W. Riley. Go about 0.7 mile on W. Riley. Shop is on the right.

Bring chairs. Pitch in lunch