

## BOARD OF DIRECTORS

### Gary Phillips '14

President:  
14800 N SR 167 N  
Albany, IN 47320  
(765) 789-8316  
[behere@netdirect.net](mailto:behere@netdirect.net)

### Bill Conyers '15

Vice President:  
50964 Lilac Rd,  
South Bend, IN  
(574) 277-8729  
[billconyerssr@yahoo.com](mailto:billconyerssr@yahoo.com)

### Ken Dettmer '15

15721 S 250W  
Columbus, IN 47201  
(812) 342-4084

### Dominick Andrisani '16

3608 Capilano Drive  
West Lafayette, IN 47906-8869  
PH #(765)463-4975  
[andrisan@purdue.edu](mailto:andrisan@purdue.edu)

### Ted Stout '16

8525 W 700 S  
West Point, IN 47992-9258  
PH# (765) 572-2467  
[stout8525@tds.net](mailto:stout8525@tds.net)

### James Johnston '13

Education Chairman:  
806 Twyckingham Lane  
Kokomo, IN 46901-1885  
(765) 452-8165  
[kokomoblacksmith@comcast.net](mailto:kokomoblacksmith@comcast.net)

### Keith Hicks '13

Secretary:  
7096 Dorrel Rd.  
Brookville, IN 47012  
(765) 914-6584  
[keithhicks2011@gmail.com](mailto:keithhicks2011@gmail.com)

Librarian:  
Larry Rosentrad  
8715 E. 375 N  
Churubusco, IN 46723-9501  
260-693-3267  
[rosentrad@cs.com](mailto:rosentrad@cs.com)

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

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

September 2012

# 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)

10:00 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*.

*The Forge Fire* is the newsletter of the Indiana Blacksmithing Association Inc. (IBA) IBA is an affiliate of the Artist-Blacksmiths Association of North America Inc. Permission is granted to other similar non-profit organizations to reproduce uncopied articles originally appearing in *The Forge Fire* provided credit is given the original source.

#### More nearby resources and organizations for blacksmiths:

**Rural Smiths of Mid-America:**  
Meetings are on the first Saturday  
of each month  
Call Moe Handy  
(317) 862-5647 for details.

## IBA MEETING SCHEDULE

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

**Sept 8 2012**      **SUTTON-TEROCK MEMORIAL BLACKSMITH SHOP**

**Oct 20 2012**      **WABASH VALLEY BLACKSMITH SHOP**

**Nov 17 2012**      **ST JOE VALLEY FORGERS**

**Dec 8 2012**      **CHAZ KAISER'S BATESVILLE**

INDEX

PGS 3-6  
SATELLITE NEWS  
  
PGS 7-11  
SIDE DRAFT FORGE,  
PART 1

## Editors Message

This months hammer in will be at Sutton-Terrock Blacksmith Shop. Fred Oden will be demonstrating tong making. Everyone is encouraged to bring two pieces of 1/2" rod by 18" in order to make a pair to take home. Fred reported the class in August at Maumee Valley was very well received. The board of directors will hold a meeting after the hammer in.

We have many contributions of valuable information, so my space is limited. Next month I plan to provide some photos of both Michael Wollowski and Fred Oden demonstrating tong making. Michael's demonstration at the One Armed Blacksmith shop was excellent. I look forward to Fred's as well.

Next month will be at Wabash Valley.

## Trail of Courage Festival

All blacksmiths are invited to the 37th Trail of Courage Living History Festival Sept. 15-16. The hours are 10-6 on Sat. and 10-4 on Sunday. Admission is \$6 adults, \$2 children age 11 and under, free for kids 5 and under. Earn free admission by helping in Sutton – Terrock blacksmith shop.

There will be several blacksmiths, tinsmiths, and silversmiths set up in historic tents. Music and dance on 2 stages, canoe rides, muzzleloading shoots & hawk throws, blanket trading and booths, foods cooked over wood fires. Free tram rides from blacksmith shop in the village to the festival. It is fun and educational. Hope to see you there!

## Special Hammer In September 29

There will be a hammer-in and hog roast September 29, 2012, at Jerry Robinette's shop, 16139 N 500 E, Elnora, In. 47529. This event is being held to benefit Alan Brazzel who lost his blacksmith shop in a fire. Donations of tools, equipment, money, gifts, etc. will be accepted. All proceeds will go to Alan to help rebuild his shop. You don't have to donate to come and enjoy a good time and good food.

If you have any questions or need information please call Jerry Robinette at 812-698-0131 or Alan Brazzel at 812-863-4733.

## IBA Satellite Groups and News

### **Sutton-Terock Memorial Blacksmith Shop**

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

### **Wabash Valley Blacksmith Shop**

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

### **Maumee Valley Blacksmiths**

Meet: 2nd and 4th Saturday  
 Contact: Clint Casey (260) 627-6270  
 John Schamber (260) 579-7303

### **Rocky Forge Blacksmith Guild**

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

### **Whitewater Valley Blacksmiths**

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

### **Bunkum Valley Metalsmiths**

Meet: 1st Saturday  
 Contacts: Doug Neukam (812) 259-4430  
 Jim Malone (812) 636-7533  
 Kathy Malone (812) 725-3310

### **Jennings County Historical Society Blacksmith Shop**

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

### **Fall Creek Blacksmith Shop**

Meet: 4th Saturday at 9 AM  
 Contacts: John Zile: (765) 533-4153  
 Larry Singer (765) 643-5953  
 Farrel Wells (765) 768-6235

### **St. Joe Valley Forgers**

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

### **The Southern Indiana Meteorite Mashers**

Contacts: Billy Merritt (812) 338-2876  
 Steve King (812) 797-0059  
 Jeff Reinhardt 812-949-7163

### **One Armed Blacksmith's Shop**

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

### **"Doc" Ramseyer Blacksmith Shop**

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

### **"Doc" Ramseyer Blacksmith Shop**

#### Notes for August 19, 2012

Had gotten blower set on stump so its output would align to input of tuyere, under the fire pot. When Larry Whitesell and Glenda arrived, he was able to get under forge to align the ducting (with expanding of end) to get it on. With the wiring this far checked (blower and varyack) we were able to get from a low air flow to a flow strong enough to lift coal out of the fire pot.

When talking to Harry Williams, we felt by adding a flange to the input of the electric blower we would be able to use additional duct work to the crank blower thus the integrity of original set up and be able to use either type blower one at a time.

Larry started the forge fire and went to work on making an interesting three legged stand for a candle stand base. Harry was working on "S" hooks when I realized I was missing the small vise I was restoring to find that it was under the sign-in book. I feel like often it is my mind I have lost.

JJ made a heart from a horseshoe. He showed how starting with a fuller at the center (toe) of the shoe would be allowing the reforming of the open area and thus closing the shoe into the form of the heart. With this use the electric blower has worked with no problems so now we need to get wiring to the shop and 3-way switches on the forge so each side has control of stopping and starting the blower

Keep the Forge Fires coming! H Charles Gruell

## IBA Satellite Groups and News (continued)

### Jennings County Historical Society Blacksmith Shop

The Jennings County Historical Society Blacksmith Shop was opened by Ray Sease at 6:46 am. He brought his cordless weed-eater to make a path to the door first. Afterwards he cleared the front of the shop. After breakfast at the Log Cabin, Ray requested that Charlie Helton show us again the finer points of making a half-penny snub end scroll. Our forge master graciously picked up his hammer and gave a memorable presentation. He was so inspiring, Ray Sease, Brad Weaver, and John Wendell all had to have a turn at it. After everyone that wanted had a chance at the anvil, J.C. Reschar decided he wanted to make a cross the old way, split with a chisel- not sawed. Ray was very instrumental with this technique, although he hadn't made a fixture for it yet. They used 1/2" square for this task. After a great deal of effort, J.C. made the cardinal sin of working steel too cold and paid the ultimate price. It Broke. A lesson not soon forgotten. We had 13 in attendance, and a profitable iron-in-the-hat. By now, the State Fair is behind us and many thanks to the many people who braved the elements and make a fine showing. I hope this inspired some newcomers to the art. The Sullivan Blacksmith Shop at Hayden will be giving demos on Saturday , Labor Day. Visit other shops when you can, you may have a surprise. You might be inspired or reminded of something you may have forgotten, although none of us are that old! Ha! Paul Bray

### Sutton-Terock Memorial Blacksmith Shop

We opened with four young boys ready to try blacksmithing. Kyle and Dustin Price and their friend Jobe Kayler all from Argos, In. They all made S hooks.

Levi Berkshire of Royal Center one of our regulars was there his grandmother who was still wearing her diamond ring that we made her last mouth from a horse shoe nail.

Tim Pearson helped with the young boys. We only let the young boys work for two hours so that they don't hurt themselves. Tim then made a meat turner and showed us a cup holder he found on the net.

Denny Setnor and wife Kim came and Denny made a uneven twist bar that he seen on the net. I think that his wife came to keep him out of trouble. She tried hammer control. I think she might be going to use the hammer on him.

Allyson Bender made a arm bracelet and Tim helped her make a two heart bracelet from a fork.

At this time it was only Denny, Tim and myself so Denny and Tim decided to make a cup holder from two horse shoes. As they struggled with this I watched and figured out what they was doing wrong. So I put a horse shoe in the forge and was getting things ready then the sparks where flying and the shoe was burnt in two but I think that Tim turned up the blower so he could call me SPARKIE.

Hammered in Friendship

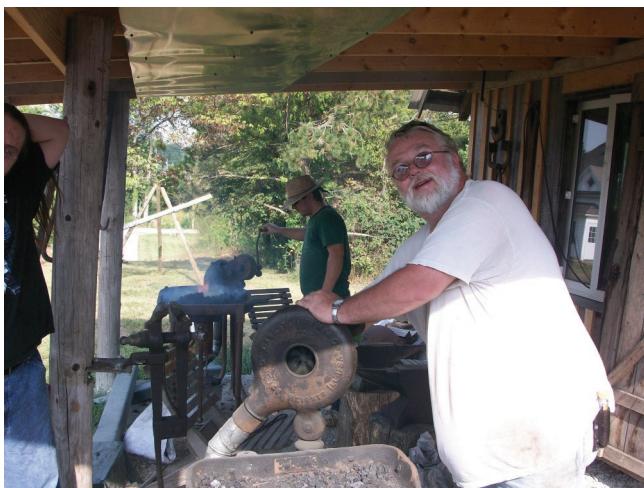
Fred Oden



## IBA Satellite Groups and News (continued)

### Bunkum Valley Metalsmiths

The Bunkum Valley Metalsmith's met on August 4, 2012. We had another good day of blacksmithing. I don't think the day was as hot as last month but still pretty hot. We had another good turnout of people for this meeting, about 15 in all. We had all three forges in use again, Athan Lamson was making knife blades and he made a guard for a sword, Aaron Baker was making a stand for a swage block, Chuck Kryder was making a hammer rack out of a steel wheel, Dakota Smith was drifting an eye in a tomahawk with Jim Malone's help. We had some new folks show up again this meeting. Perry Hendricks brought two of his brothers who had not been here



before and Alan Brazzell instructed them on making S hooks. We had another day of fun (there is always laughter when you get this group together), food and fellowship. As always there was some learning going on, which is what it is all about.

For anyone who has not been to the White River Valley Antique Association show, it is September 6, 7, 8 and 9 and our club, The Bunkum Valley Metalsmiths, will be represented there. It is a great place to go to see antique machinery, all sorts of demonstrations, flea markets and food. Come and see us at the Blacksmith shop!

I usually say if you have too many irons in the fire...but it's been too hot to have too many, so take 'em out and set on the porch...then maybe you won't lose your temper ;)



## IBA Satellite Groups and News (continued)

### The Southern Indiana Meteorite Mashers

This month's meeting was held at Jeff Reinhardt's shop in Floyds Knobs. Had 4 beginners join us and all got forge time. The Brotherhood of Friendly Hammer-men team again made a 3" split cross. Our time is improving as is our tooling. We now have a big dedicated forge, dedicated tongs and dedicated bending tools. The heats take a fair time so the forge is configured for sit down cranking.

Another highlight was the initiation of Jason Hardin to the elite club that have forged meteorite. With Forge Master Billy Merritt instructing, Jason forged out a very nice billet. Jeff Reinhardt's Daughter Sarah displayed her pendant made from meteorite and Jeff showed a photo of the earrings made for his other Daughter Rachel. Lunch was Spaghetti made by Jeff's lovely young Bride Roxane.

The next meeting will be held at Hidden Hill in Utica on Sept 8th during their Bluegrass festival. The regular meeting on the last Saturday in Sept will not be held as SOFA and the Pig Roast benefit at Jerry Robinette's would conflict.



## The Ken Dettmer Side-draft Forge, Part I

Michael Wollowski and Kenneth Dettmer

On these pages, you will find construction notes for building a forge that Ken Dettmer built for himself. His forge is not only highly functional; it also has classic good looks. Figure 1 shows Ken's forge. In figure 2, you see a forge as shown in Jopseph Moxon's book entitled "Mechanick Exercises", which was published in 1694!



Figure 1: Ken Dettmer's forge and forging area.

### Design

Before building your forge, you need to decide on the dimensions of it. While the width and depth of the forge are important considerations, the key decision is about the height of the forge table. Have a look at the set-up of Ken's smithy as shown in figure 1. The tops of his forge table, anvil, post vise and power hammer anvil are all approximately at the same height. This makes for a very convenient set-up, especially when handling heavy stock. For your reference, including the hood, Ken's forge is 76½" wide. It is 44" deep and 32" tall. This last dimension includes the table top, which is 3" thick.

It may be best to plan on a certain height. Then, before putting the table top in place, use a piece of plywood instead. Grab some tongs and a piece of iron and see whether the chosen height aids or detracts from the work flow. If you are not comfortable with the chosen height, add or remove a layer of bricks.

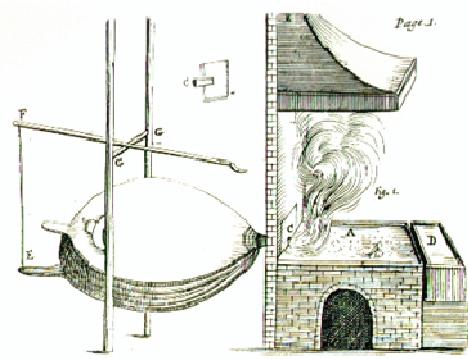


Figure 2: A forge in 1694

Standard bricks are 8" long by 4" wide. As such, it makes sense to consider multiples of 8 for the depth and width of your forge. Add about  $\frac{1}{2}$ " for each mortar joint, giving you the following formula for the width and depth:  $8\frac{1}{2} * n$ , where  $n$  is the number of bricks. Ken's forge is 9 bricks wide, giving  $8\frac{1}{2} * 9 = 76\frac{1}{2}$ ". (The additional  $\frac{1}{2}$ " is for the joint between the forge and the wall.) His forge is 5 bricks deep, giving  $8\frac{1}{2} * 5 - \frac{1}{2} = 42$ ". When it comes to the height, we found that bricks can be anywhere between 2" to 3" tall. The bricks Ken used are about 2 " tall. His forge table is 10 bricks tall, giving  $10 * 2\frac{1}{2} - \frac{1}{2} = 29\frac{1}{2}$ ". Add in 3" for the apron and you get a height of about 32".

## Table Base

Figure 3 gives a nice view of the innards of Ken's forge. Notice that all walls are two bricks wide. A schematic layout of the footprint can be found in figure 4. Ken built the arch support from plywood, however, thick layers of insulating foam board glued together will work too. Lest you think that in Ken's shop, bricks float on air. The arch in figure 3 was too tall, and Ken removed it to start over again; see figure 5.

## Fire pot and Blower Assembly

Notice that the space between the arches is open towards the wall. This is where the blower assembly is housed as shown in figures 6, 7 and 9. In figure 7, you see a small table on which the blower is placed. Ken built it to suit his needs.

In the background of figure 6, you see the wiring for the blower. The wire for the electrical box is fed to the back of the forge between the wall and the forge proper. We will talk about wiring later on in the article. For now, you should know that he has a blower switch on both sides of the forge.



Figure 3: Innards of forge

Ken used a Roger Lorance firepot, which is by many considered to be the best firepot available today. The main firepot support structure consists of two T-bars, about 1" by 1 ¼" in size, as shown in figure 6. T-iron cross members are welded in place so that they support the front and back of the firepot. The firepot itself is not welded to the support, in case it needs to be replaced in the future, an unlikely event.

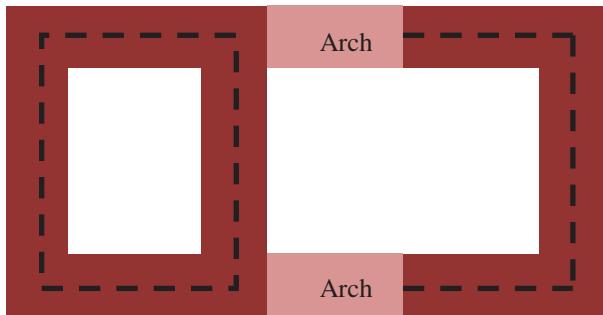


Figure 4: Double wall construction



Figure 5: Starting over again

The firepot support structure is welded to a table top frame which is made from 3" angle iron. The angle iron frame lines the outside of the forge and will eventually become the table top. Notice that Ken's table top butts up to the draft hood base and does not cover the entire width of the forge. To be exact, the angle iron stops short at the length of three bricks, see figure 11 for details. Some people like the top of the firepot to be a flush with the top of the table, some like to have it a little bit below the top. Now is a good time to make this decision.



Figure 6: Placement of firepot



Figure 7: Blower placement

On the right side of figure 8, you will notice a lever which is used to operate the clinker breaker. The push/pull knob on the left side of figure 8 is used to operate a butterfly valve which regulates the airflow to the firepot. There are two equivalent levers on the other side of the forge so as to operate it from either side. Now is a good time to drill the holes for the rods that are operated by the levers. The clinker breaker actuating rod will likely need to be welded to extend it on both sides. See figure 7 for an under-the-hood view of the clinker breaker rods.

In figure 9, you see some of the details of the butterfly valve actuating mechanism. Ken built it himself. In the center of figure 9 you see a lever which is attached to the butterfly valve. On the left side of the lever, you see tie rod ends with which the push/pull rods are attached to the lever. On the right side, you will notice a horizontal and vertical bar. The vertical bar acts as a stop, when the butterfly valve is in the closed position. The vertical bar could be used as a friction plate, in case the rods that stick through the walls do not provide enough friction.



Figure 8: Levers for clinker breaker and air-valve



Figure 9: Air-valve assembly

### Table Top

As mentioned earlier, the table top has a frame made partially from 3" angle iron and partially from a single row of bricks. See figure 10 for details. In figure 10, you also see that Ken plugged the hole on the near-side of the forge with lumber. The top of this plug is about 1" shy of the surrounding brick, so as to key the top in. This prevents it from shifting. The archway is plugged with sheet metal. Anything sturdy will work, including corrugated steel. In the back of figure 10, you will notice the routing of the wires through the back brick wall. The hole is covered with sturdy cardboard.

Next, you want to weld up a reinforcing mesh that prevents the concrete from cracking. See figure 11 for details.



Figure 10: Plugged top

Ken decided to build a steel mouth to the opening of the smoke chamber. In figure 11, you see that it butts up right to the firepot. By inference, you can tell that the firepot butts up right to the smoke chamber. The opening of the smoke chamber is 13" wide by 17" tall and is welded from 3" angle iron. It is tack-welded to one of the angle irons that hold the sheet metal in place.

Notice that the opening of the smoke chamber is as about as wide as the firepot is long. The firepot is 14" wide while the opening is just 13" wide.

If you prefer to go with an arched opening, then weld in place a properly bent piece of flat steel. See figure 12 for such an alternative.

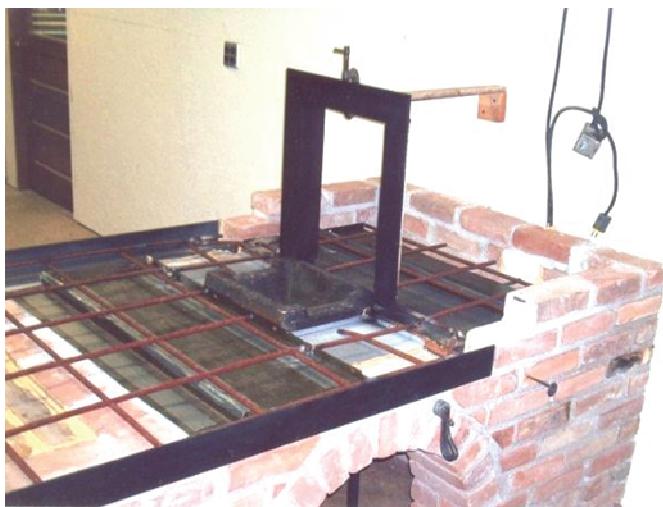


Figure 11: Rebar mesh in place



Figure 12: Alternative, arched opening

Since the concrete has a good amount of weight to it, you want to add some temporary supports, especially around the firepot. 2 by 4s cut to length work well. Once everything looks good, it is time to mix up the concrete. SAKRETE concrete mix is a good choice; all you need to do is add water. See figure 13 for the current state of affairs. Notice the wires for the forge blower switches tucked behind the far wall.



Figure 13: Base of forge finished



## The **FORGE FIRE**

Newsletter of the  
Indiana Blacksmithing Association,  
Inc.

**Bill Kendrick** *Newsletter Editor*  
1280 N CR 900 W  
Seymour, IN 47274

Address Correction Requested  
If Undeliverable return to sender  
With original address legible

First Class Mail

### **September 8 Hammer In & Board Meeting Sutton-Terock Shop**

**(note this is a 2nd Saturday Hammer In)**

Located at the Fulton County Historical Society

Located off US-31 about 4 miles North of Rochester

### **October 20 Hammer In Wabash Valley Blacksmith Shop**

**Fowler Park, Terre Haute**

From I-70 exit, take US-41 South 5 miles.  
Turn left on East Oregon Church Rd and travel 1 mile to Fowler Park