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 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 uncopyrighted 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. Contact **John Wendel** (812) 343-1969 if you are willing to host or demonstrate for IBA

June 25-27	IBA CONFERENCE TIPTON
July 17 2010	SOUTHERN INDIANA METEORITE MASHERS, PAOLI
Aug 21 2010	JENNINGS COUNTY BLACKSMITHS VERNON
Sept 18 2010	ST. JOE VALLEY (BOARD MEETING)

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Dates to Remember

IBA CONFERENCE JUNE 25-27

SOFA QUADSTATE CONFERENCE SEPT 24-26

IBA 30TH BIRTHDAY BASH OCT 16

Editors Message

Hats off to Joyce, Bobby and the entire Whitewater Valley group. The May hammer in was a tremendous success. Mark Conrad provided a superb demonstration (see more on page 5). Mark showed us how to make a Colonial style trivet by bending and welding a single piece of flat stock. Mark sounded pretty unsure of his welding ability in front of a crowd, but he made the forge welds for the legs look easy. We had plenty of good food and good company and perhaps the prettiest day of the entire year. I encourage everyone to stop by and visit the Whitewater Valley group. They meet at 4:00PM the second Saturday of each month.

The IBA Conference is just around the corner. I know our demonstrators are practicing their techniques. See page 3 for some photos of Clifton, Kurt and Steve practicing to forge a leg vice on a power hammer. I do not know exactly what Jack, Charlie and John will be demonstrating. However I have seen each of them demonstrate at different events. These demonstrators have widely different approaches and techniques, and they are all fantastic demonstrators with great talent. This will be one of those Conferences where most of us will want to be in three different places at one time.

That brings me to one key point. We cannot be in three places at one time, but we should be able to benefit from all three demonstration sites. If you have **video equipment** and are willing to record demonstration events, please **contact Jim Johnston** at (765) 452-8165. With the depth of talent at this years Conference, it would be terrible not to have lasting records of these demonstrations. If possible we would like to have remote monitors so attendees can see details of the events.

As stated in previous Forge Fire editions, 2010 marks the 30th anniversary of the IBA as an organization. This years conference is special with a focus on Indiana blacksmiths. I have had the good fortune to attend conferences at SOFA and at Pontiac. I can clearly state that this years IBA Conference demonstrators are as strong as any line up I have ever seen. If you are undecided about attending, don't be. This is the one Conference to attend. Hopefully my exuberance is not over bearing. I am genuinely excited. I hope to see the biggest attendance in IBA history.

One final note. If you do attend, be sure to thank Jim Johnston for his hard work. He deserves our gratitude.

Visit the IBA website at: www.indianablacksmithing.org

Clifton, Kurt and Steve getting ready for Conference. Photos by Jim Johnston

Sutton-Terock Memorial Blacksmith Shop — North Central Region — Fulton County

Meetings of the Sutton-Terock Memorial Blacksmith Shop are held on the second Saturday of the month starting at 9 a.m. at the Fulton County Historical Society Museum. The museum is located four miles north of Rochester on US 31. For information, call Fred Oden, Forgemaster & Treasurer, at (574) 223-3508, or Dennis Todd Secretary/Reporter at (574) 542-4886.

Wabash Valley Blacksmith Shop — West Central Region — Vigo County

Meetings of the Wabash Valley Blacksmith Shop are held on the second Saturday of the month starting at 9 a.m. Meetings are held at the blacksmith shop in Fowler Park, approximately 7 miles south of Terre Haute. For detailed information contact Max Hoopengarner at (812) 249-8303 or Rick Helton at (812) 894-3172

Fall Creek Blacksmith Shop — East Central Region — Henry County

Meetings of the Fall Creek Blacksmith Shop are held on the fourth Saturday of the month starting at 10 a.m., with open forge at 9 a.m. at the residence of John Zile in Middletown. For more information contact John at (765) 533-4153 or Larry Singer at (765) 643-5953. Or Farrel Wells at 765-768-6235, flwells@verizon.net

Maumee Valley Blacksmiths — Northeast Region — Allen County

The Maumee Valley Blacksmiths and Blue River Blacksmith Guild are a merger of two of our satellite groups. They Meet on the first Saturday of the month at the Maumee Valley Steam Association Grounds in New Haven, Indiana. Call Clint Casey at 1-260-627-6270 for more information.

St. Joe Valley Forgers — North Central Region — St. Joseph County

Meetings of the St. Joe Valley Forgers are held on the 4th Saturday of the month starting at 9 a.m. at the residence of Bill Conyers in South Bend. For more information contact John Latowski at (574) 255-6209 or Bill Conyers at (574) 277-8729.

Rocky Forge Blacksmith Guild — Northwest Region — Tippecanoe County

Meetings of the Rocky Forge Blacksmith Guild are held on the second Saturday of the month starting at 9 a.m. Meetings are held at the home of Ted and Carol Stout, approximately 8 miles south of Lafayette. For more information contact Ted Stout at (765) 572-2467.

One Armed Blacksmith's Shop — Johnson County

Meetings of the One Armed Blacksmith's Shop are held on the 1st Saturday of the month starting at 9am. For more information contact Tim Metz at (812)447-2606 or tim.metz@cummins.com.

Whitewater Valley Blacksmiths

Meetings of the Whitewater Valley Blacksmiths are held on the second Saturday of the month starting at 4:00 p.m. They meet at Big Cedar Forge, the residence of Joyce Roell & Bobby Hoff, east of Brookville on SR 252. For more info call Keith Hicks at 765-647-0019.

We had a good turn out for our May meeting. The weather was nice and we were able to do some forging outside. There were about 25 people in attendance for the Hammer-In the following weekend. As always, there were tons of good food and many gallons of coffee!

Mark Conrad bravely stepped up for a demo on making a colonial style trivet. He took a picture from the Colonial Iron book and figured how to re-create it. He had come out to practice his forge welds in our coal forge, since he had been using his gas at home for welding and was not used to the coal. But he made the switch with good results. Mark mentioned he didn't know that you "couldn't use gas for forge welding" since it works for him!
The trivet he made was from flat bar stock. He put the bends in before welding the three "legs" and bringing them to a graceful taper and curve for the feet.

Mark's uncle, Richard Conrad was also in attendance, which made the event extra special. We all liked Mark's inspirational speech about "just doing it."
I also appreciated the gratuitous advertising bits for my new business venture "Inksmith" Custom Screen Printing. He was sporting a nice apron, tee shirt and tote, which he noted as being available for sale in the gift shop.
A big thanks to Mark!

We hope to see you all at Tipton!
Or maybe Memphis!

Keith Hicks doing some delicate work at the Whitewater Valley May meeting.

The Southern Indiana Meteorite Mashers Southern Region Orange County

Forgemaster Billy Merritt (812)338-2876, Treasurer Steve King (812)797-0059, Secretary Shawn Gilley(812)-486-9113

We had a good meeting on Sat. nine people showed up. As usual good fellowship and chance to learn and unlearn some things. We will not be meeting in June as the State Conference inTipton is in June. We will however, be hosting the Hammer-In in July 17 th. At Steve's shop. And at the end of the month again at Jeff Reinhart's shop.2810 West Riley Rd., Floyds Knobs, IN 47119. Directions and map to follow in next month's letter. Til then keep your fires hot.

Jennings County Historical Society Blacksmith Shop Southeast Region Jennings County

Meetings of the Jennings County Historical Society Blacksmith Shop are held on the second Saturday of the month starting at 9 am in downtown Vernon. For more information contact Ray Sease at (812) 522-7722.

The Vernon shop was opened at 6:30am by Matt Jones , Kevin and Keith Welsh. Matt fired the forge and honed his skills at leaf making. Later Bill Newman made the long journey down here to show his support for us. He worked on a pineapple-twist handle for a wire brush that was donated . We continued to work out the details for our conference project.. Bill Newman then proceeded to make several" push-in" glass holders for "Mother's Day", with the assistance of friends. We are considering buying a safe for our Iron-in the- Hat money because of Brinks failure to show up properly and timely. Forgemaster Charlie Helton has been instrumental in the construction of our cart. Hats off to him!! Our workshop for conference plaques at Jerry Williams went great. Many thanks to Jerry for sharing his resources with us. Paul Bray

The IBA still needs helpers for this years conference:

- Items for the auction
- Iron in the hat
- General set up and tear down
- ***Videographers*** **to capture our demonstrators**

Looking for specialty books and DVD's on blacksmithing?

Check out

The IBA Library

The IBA Librarian, Larry Rosentrader, will bring a good sample of the IBA library materials to the Conference. If you are interested in a specific material, contact Larry at 260-693-3267 or email: rosentrad@cs.com. A listing of the library holdings is available at the IBA website: **www.indianablacksmithing.org** (click on "Readers' Corner" link).

Materials are available at no charge to IBA members. You will need to provide a deposit for the replacement value of items borrowed, but the deposit will be returned when the materials are checked in. The IBA will pay for postage to send materials to you, but you are responsible for return costs

Special note for Southern Indiana Smiths: Larry is planning to stop by the July hammer in at Steve Kings. Be sure to contact Larry if you want him to bring specific materials with him.

Octopus Key Hanger

Michael Wollowski

I saw an Octopus shaped hanger at the 2008 SOFA conference. Ken Scharabok made and entered it in the show-and-tell contest. In this document, you will find construction notes on how to make this hanger. It is a fun project to practice your forge welding skills.

The one on depicted on the left was made by Ken Dettmer and me. It is made from 5/16” round steel, but 3/8” will work as well. Start by drawing out one end to a point. Draw it out over a length of about two inches. Cut off a nine inch piece and draw out the other end so that you end up with a piece about 10” long. Prepare four pieces in this fashion. If they are of varying lengths, that is fine as it adds variety to this piece. Next, fold over all four pieces at about the center.

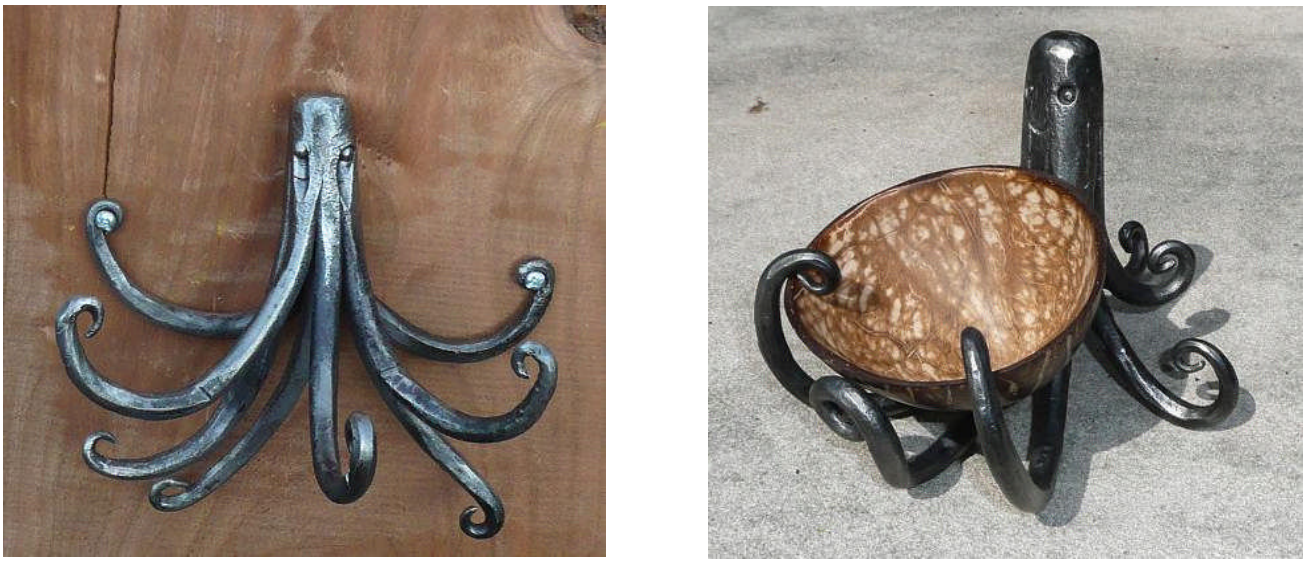


Figure 1: Octopus key hanger on left, jewelry dish on right

Now comes the fun part: forge-welding the pieces together. Ken took two of the pieces and forge welded them together. If you have never seen Ken forge weld, you missed a masterful performance. He forge welds at the lowest temperature I have seen anyone do this and he does it with an effortlessness that borders on magic. Next, forge-weld a piece to the side of the one you just completed, giving you what eventually will be the three arms in the front. Weld the last piece to the back, ideally the center back. Now, round over the head of the octopus using a triangular slot of a swage block and turn frequently.

Use a hollow round punch to make the eyes. Start at a low angle and when just about done, raise the chisel to give the eyes a little bit of an eye brow. See how we did this on the left of figure 1. Finally, bend the arms, ensuring that two in the back can go fairly flat against a wall. Notice that the arms are curled to the inside mimicking how actual octopi curl their arms. If your key rings are fairly large, this works. Alternatively, you may wish to curl them to the outside

On the right of figure 1, you see a variation of this theme, a jewelry dish in which the octopus is holding a coconut shell. It was inspired by the recent discovery of tool use by octopi, see: http://www.youtube.com/watch?v=1DoWdHOtlrk.

Jim Johnston provided the following information from an old text. We will offer segments as space allows

Notes for Forge Shop Practice

Notes on Iron

Iron: Iron is the most important of the metallic elements, silvery white in color when pure, very tenacious, malleable and ductile. Iron was first produced in America in 1622 near James River, Virginia. It was used in the industrial arts in four forms – cast iron, malleable iron, wrought iron and steel, each form having its own marked physical properties, fitting it for a special purpose.

Cast Iron: Cast iron is an alloy. It is often called pig-iron because of the fact that it is molded in little bars or pigs as it runs from the furnace. The process of making this iron is that of smelting or melting the ore in a blast furnace in the connection with the various fluxes, particularly limestone. The furnaces are from fifty to sixty feet high and are called "blast" furnaces because the blast is forced into them. This species of iron is extremely brittle and melts at a relatively low temperature; is crystalline in construction and can only be used for such articles as may be made or cast in molds. It contains a large percentage of carbon and usually silicon, phosphorous and sulphur. The amount of carbon varies from 1.5% to 4.5%

Malleable Iron: Malleable iron is cast iron which has been toughened during the process of baking in an oven for six or eight days. This decarbonizes the cast iron.

Wrought Iron: Wrought iron is the extreme of the series. It is an alloy of iron and comes the nearest to being pure, having an extremely small percentage of carbon, practically none. It is very malleable, fusing at a very high temperature; becomes pasty during a considerable range of heat; will keep in a malleable condition above a red heat, which is much below the fusing point and thus can be bent and formed into different shapes with the hammer. Iron work produced in this way is called *Wrought Iron*. Wrought iron manipulated when hot is said to be forged. Two pieces brought to a fusing point may be united into one piece by hammering. Pieces so united are said to be welded. It will not become hard and brittle like cast iron as it is of a fibrous construction; it shows a high tensile strength at a fracture. This iron is divided into two classes – *common or refined iron and Norway iron*. Wrought iron has been largely displaced for most purposes by the increased production of steel. The iron used in making the exercises in this course should be Norway iron as better results are attained than by using common iron.

Puddling: The general process of making wrought iron at the present day is known as "puddling." This process was invented about the year 1780 by Henry Cort and improved about fifty years later by Joseph Hall. The method employed is one of melting cast iron in a chamber or on the hearth of a reverbatory furnace, the flame passing over the molten metal. The requisite time for this operation is about thirty minutes. When the

metal becomes melted, an oxidizing metal is added. All phosphorous, sulphur, carbon and other impurities may be eliminated by stirring. During the melting a slag forms and adjusts itself to the iron around each fiber, showing a fibrous rather than crystalline structure. There are many varieties of furnaces of various capacities; the capacity of the most common size ordinarily being from 500 lbs to 1500 lbs.

The Forge: The "forge" may be defined as an open fireplace for heating iron and steel. Where only one or two forges are required and the blast is furnished by hand, a brick forge is used having a hood attached to a chimney to catch the smoke, and the air blast is furnished by a bellows. Of late, such forges are being replaced by iron forges and a small blower or fan attached to obtain the blast. Such a forge, illustrated in Figure 1, is made of cast iron, the blast coming from a pressure blower and the smoke taken away by an exhaust blower. This method is known as the down-draft system and is used in shops where a number of fires are necessary. The advantage of this system is in the doing away with all overhead pipes which interfere with the lighting of a shop.

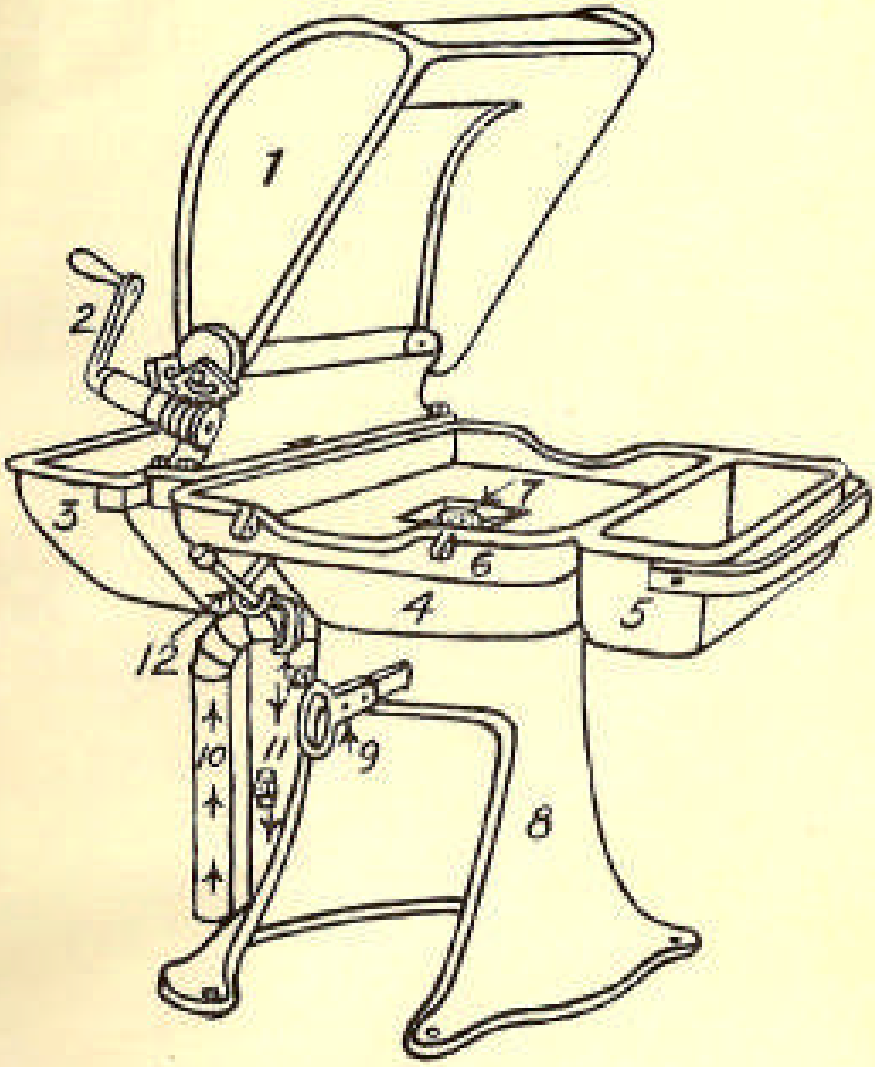


FIGURE 1. NAMES OF PARTS OF FORGE.

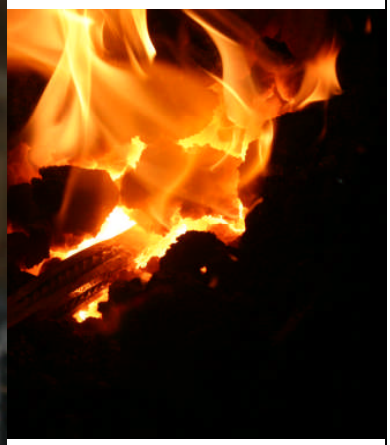
1. Hood
2. Lever to Operate Hood
3. Coal Tank
4. Firepot
5. Water Tank
6. Pan
7. Tuyeres
8. Base
9. Ash Dump
10. Blast Pipe
11. Smoke or Exhaust Pipe
12. Blast Lever
13. Blast Gate

9-Bar Twist

Here a 9-bar twist that I saw in another state blacksmithing newsletter. I can not find the actual newsletter, but I believe it was the California Blacksmithing Association newsletter.

1. Cut 9 pieces of square stock to the desired length. Pieces shown are 3/16 x 7 inches
2. Twist 4 pieces the same number of turns. I use a section of pipe control the length of the twisted section and twist anything 1/4" or smaller cold to insure even twisting.
3. Stack all 9 pieces in a 3x3 arrangement with the 4 twisted pieces in the center of each side. I found the step of the anvil to help stack the pieces as the twisted parts occupy a larger volume than the original square section.

4. Pull the stacked pieces into a tight bundle and wire for forge welding.



5. Forge weld each end of the bundle, maintaining the original square shape of the bundle. Use care to limit the amount of flux getting into the area between the welds. In this case the finished piece was intended to be welded onto a 1/2" square bar, so I tried not to draw the piece during welding.
6. Heat the finished piece and twist to suit.
7. An alternative design puts the twisted bars on the corners, rather than the center of each face.

The *FORGE FIRE*
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Bill Kendrick *Newsletter Editor*
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Seymour, IN 47274

First Class Mail

Address Correction Requested
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June 23-27
Tipton, IN
IBA Annual Conference

Featuring: Jack Brubaker
Clifton Ralph, Kurt Fehrenbach, Steve Parker
Charlie Helton, John Zile

July 17
Paoli, IN
Steve Kings Shop

Southern Indiana
Meteorite Mashers