December 2018

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.

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.

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.

Dec 8 2018	**DON REITZEL'S SHOP (2ND SATURDAY)**
Jan 19 2019	**TBD**
Feb 16 2019	**KEN DETTMER'S SHOP COLUMBUS**
Mar 16 2019	**BUSINESS MEETING**

Editors Message

This month the IBA will be meeting at Don Reitzel in Stilesville. Don has plenty of space with multiple forging areas. His shop is also well heated, so do not let the weather forecast keep you home.

I still have not heard about a location for the January hammer in. Stay tuned for an announcement.

February hammer in will be in Columbus at Ken Dettmer's shop. We always have a big turn out at Ken's.

March will bring us to the annual business meeting. Start getting your nominations ready for the board of directors ballots. You should also contact a board member if you are interested in taking on an appointed position, or if you have ideas about IBA events you would like to see.

If you have a power hammer, or are interested in obtaining one, there will be a power hammer rebuilding class in March. See page 5 for more details.

Clifton Ralph is in poor health and he would like to hear from his many friends in the IBA. Clifton has been an instrumental member of IBA for many years. He is widely respected for his knowledge of forging, especially in the use of power hammers.

Send cards and letters to:

Clifton Ralph
4041 West 47th Avenue
Gary, IN 46408-4023

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Dates to Remember

March 16, 2019
Annual Business Meeting at Kelley Farms

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
Dennis Todd (574) 542-4886

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
Dave Kline (765) 620-9351

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

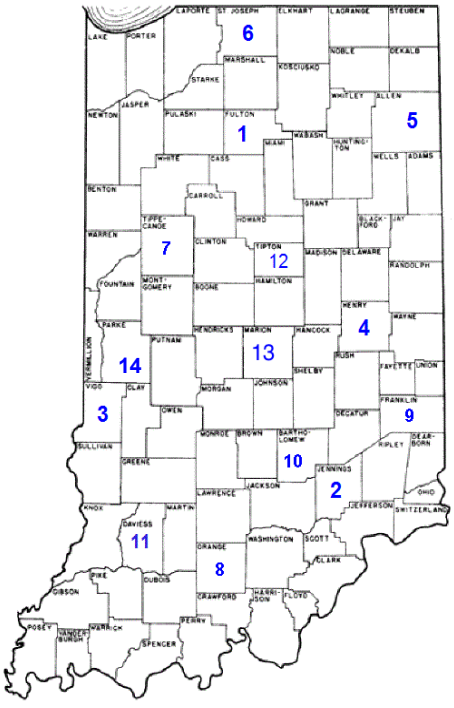
10) One-Armed Blacksmith Shop
Meet: 1st Saturday
Contact: Tim Metz (812) 447-2606

11) Bunkum Valley Metalsmiths
Meet: 1st Saturday
Contacts: Jim Malone (812) 725-3311
Terry Byers (812) 275-7150
Carol Baker (317) 809-0314

12) "Doc" Ramseyer Blacksmith Shop
Location: 6032W 550N, Sharpsville, IN 46060
Meet: 3rd Sunday at 2 PM
Contact: Charles Gruell (765) 513-5390

13) Satellite 13
Meet: 4th Saturday
Contact: Bill Newman (317) 690-2455

14) Covered Bridge Blacksmith Guild
Meet: 1st Saturday
Contact: John Bennett (812) 877-7274



Meteorite Mashers

Novembers meeting of the Meteorite Mashers was held at Jeff Reinhardt's shop in Floyds Knobs. The November meeting is the somewhat infamous "Smoked Turkey Hammer-in. Very well attended with people from southeastern Ky attending as well as far and wide from Indiana. The food was very stepped up with 2 smoked turkeys and Bobbi Robinette's Chicken and noodles everyone went home full. The iron in the hat was a 2 lean-to bays full affair that raised $185. Phoebe Graham's split cross got her split cross from 3" square stock finished and it cooled in time for her o take it home. Several striking anvils were drifted for hardy holes and a little striking anvil was punched and drifted. Several of the smaller forges were up and running with open forge time for all who wanted. All in all the day started cool and drizzly, and by lunch time the sun was out, the doors of the shop open and a great time was had by all.

The next meeting will be at Dave Kunkler's shop in Branchville.

IBA Satellite Groups and News (continued)

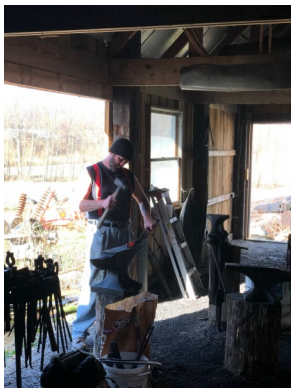
Jennings County Historical Society Blacksmith Shop

The Jennings County Historical Society Blacksmiths had a working day, Spreading out tons of new gravel, both inside and outside the forge. The help from Fred Vinut and his tractor was invaluable to us all. that did the work of several men. Many thanks to you and the men who helped. After that was done, Nathan Pelvor showed us the tongs he finished from the prior meeting, for which he was instantly offered a substantial sum and turned it down. Minutes later the tongs suffered a catastrophic failure. Of course Nathan began his next pair instantly. Dave Good began a claw hammer ,for the memory of his father, which turned out rather nicely. Our December meeting will be at John Cummins. Hope to see you there. Bring plenty of Steel in the Stetson ! Paul Bray

Bunkum Valley Metalsmiths

The Bunkum Valley Metalsmiths met Saturday December 1st. We had lots of wind and rain but 35+ made it out. There was plenty of forging going on. We had 2 young ladies working on their blacksmithing skills. Talula is 12 and this was her first experience. She loved learning to make S hooks and tried her hand at a leaf. You can see our youngest member in the pictures. We also had a Christmas ornament raffle included in the raffle was a great horseshoe tree made and donated by Jim Ray Malone. We had lots of good food and were blessed by a double rainbow.

Merry Christmas and Happy New Year from all The Bunkum Valley Metalsmiths!



LEARN HOW TO MAKE YOUR LITTLE GIANT POWER HAMMER WORK HARDER THAN EVER!

You are invited to join us for our annual Little Giant Rebuilding Seminar. It will be held Friday March 15 through Saturday March 16, 2019.

First taught by our good friend Fred Caylor of Zionsville, Indiana, we carry on his tradition of teaching how to make Little Giants run well and hit hard.

This 2 day class is a hands-on format. You will help transform a 25 LB Little Giant from running but sloppy condition into a well tuned, quiet, hard working machine. Sid Suedmeier, former owner of Little Giant, will share all his knowledge and experience gained from Fred and 25+ years of repairing and rebuilding Little Giants.

An old style 25 LB Little Giant will be rebuilt during the class, but we will also have a new style on hand to demonstrate proper assembly and adjustment of both styles.

The class is held in our shop in historical Nebraska City, Nebraska. Our city has a nice selection of cafes, antique and gift shops, orchards, wineries and museums.

IF YOU HAVE A LITTLE GIANT, THIS CLASS IS FOR YOU!

No experience is required to attend this class. Our past classes have been attended by folks from every walk of life, from students to retirees...anyone who wants to learn can benefit from this class. We approach the rebuilding process using tools that can be found in the average home workshop.

If you are in the market to buy a power hammer, this class will make you an educated shopper. If you already own a Little Giant, or any other brand of power hammer, this class will teach you how to get the best performance possible.

The class costs $95, refundable up to 7 days prior to the class; advance registration is required. We limit the class to 25 participants. The class starts at 9 AM sharp on Friday, and typically ends by Saturday evening. We are available Sunday until noon in case we encounter any exceptional problems in rebuilding, and to answer remaining questions.

When we receive your registration, we will send you a city map, along with travel and hotel information.

Airports are located in Omaha (45 miles north), Lincoln (50 miles west) and Kansas City (125 miles south).

2019 REGISTRATION

Name:_____

Business name:_____

Address:_____

_____

Telephone:_____

Email address:_____

PAYMENT

- ❑ Check enclosed
- ❑ Cash in person

  (Sorry, we no longer accept credit cards, although credit cards can be used to purchase parts through the Little Giant business owned by Roger Rice, also in Nebraska City)

POWER HAMMER INFO

Brand:_____

Size:_____

Serial Number:_____

Please call or email if you have any questions, or prefer to register by phone. You can reach us at 402/873-6605 or sidsshop@windstream.net

You can contact Roger Rice or Greg Rice about parts and repairs at 402/873-6603. Their email address is mm21654@gmail.com. Website is LittleGiantHammer.com

A bit on hydraulics

By Jeff Reinhardt

In a hydraulic system, A number of components are used to convert a power source into hydraulic pressure to do a task not easily achieved with the original power source. An example; say you have only a somewhat small gasoline motor, and want to make a nice portable log splitter. From experience you know that you have to use a wedge shaped object to spread the wood from the end to cause it to split. You know that a 12# maul swung as hard as you can will not always split the wood so you want lots of force to push the wedge into the wood to effect the split. To have the small gas engine do the work you need to take the relative rotational energy at the output shaft and convert that into a linear motion to push the wedge, or some other way of getting that wedge into the wood with great force.

So one way is to use a hydraulic cylinder to push the wedge. A straight linear push is what hydraulic cylinders do well. So a simple frame that holds the cylinder on one end and at the other either the wedge or an end stop. In any case the cylinder rod and the fixed end trap the wood between a flat and a wedge and the wood is split. But wait, it it is not yet split because the hydraulic cylinder needs hydraulic fluid, flowing with pressure to move. So you need a pump to make the fluid flow and to take some of the energy from the engine rotating shaft and raise the pressure of the fluid. So now on your frame you make a mount, and bolt the engine down. You then have to somehow couple the shaft from the engine to the pump, so one of several styles of coupling is used and the pump is connected to the engine. You also have to mount the pump either to the engine case or the frame to keep it in place and prevent it just spinning with the shaft. OK so now we have that engine mounted, and the pump mounted, how to get that fluid to the cylinder so it does not just spray around. Tube, pipe and hoses are used. Rather obviously they have to be able to hold the pressure. But wait, we also want to be able to split more then ONE piece of wood, so we have to be able to put oil to both ends of the cylinder as we desire to change the direction of the cylinder, so now we have to add a valve, and more of those tubes, pipes or hoses, again all able to take the full pressure we will see when the wood is strong and the pressure must be high. But what happens when the wood is TOO strong? Since most pumps move a fixed amount of oil for every revolution, if the cylinder stalls, and the fixed amount of oil is moved every revolution of the motor what happens? Since oil is almost non compressible, the pressure will rise till one of several things happens. The wood will split, the coupling between the motor and pump will fail, the frame will fail, the engine will stall or the weakest item will fail and spray oil. SOOO>>> we also need an item called a pressure relief valve that opens to let fluid flow so the pressure stays at or below the safe range. Last but not least a container of some sort is required to hold that oil.

We do we need a container to hold the oil? Can't we just take the oil coming from the cylinder as it moves and feed it right back to the pump to have energy added and send it to the other side? Since we have a cylinder with only one rod coming out one end NO. The rod displaces oil so the amount of oil displaced as the cylinder moves in the direction that extends the rod is less then need to fill the side without the rod and vice versa. That tank is often the item given the least thought of the system. The lowly tank has several functions. It must hold the fluid without leaking. It gives the fluid a place to rest, to give foam a chance to float up and dissipate, for particles to settle out and also an important thing a place to let the heat flow from the oil, through the tank walls and out into the air.

So, The need for a valve to move the cylinder both ways can be easily filled with any of a number of types. Say you don't mind moving a lever back and forth. So you use a "4way, 2 position directional control valve" this would have 2 positions, and would either put or to the extend side and connect the other side to tank or vice versa. This has some issues. when the cylinder is stopped at end of stroke, say retracted while you load another log the oil from the pump is going over the relief valve. Since the oil has high energy state IE high pressure, and goes to low pressure as it crosses the valve seat, that energy changes state to heat and noise. The amount of heat is nearly the same as the total energy made by the engine. Not a good choice. So you choose a "3 position, 4 way directional control vale with open center" This valve has 3 lever positions, with the middle position connecting the pressure directly to the tank, and the pump just flows oil, but can't make pressure so much less noise and heat. BUT you have to remember to put the lever in that middle position every time. And if you don't you get to hear the relief valve scream to remind you. So a better choice is the nifty 3 position, open center, pressure detented 4 way control vale. This one has a little detent that holds the valve in the retract position until the pressure rises and it then pops over to the center position and lets the oil go to tank and all automatically. Most "Log Splitter Valves" are set up this way and ever have the relief valve built in to simply the circuit and plumbing.

Now that is a very simplified description. There are literally hundreds of possible valve configurations and styles. There are many basic pump types with the more complex pumps having hundreds of control possibilities. I left out things like filters tank breathers etc.

So when you decide to build a hydraulic press, a great deal of the design is done as I went through above. start with the cylinder. Then get it mounted and that leads you to the frame. Now you have to have a way to make the pressure and to control it, and that describes the circuit. Then there is the choice of prime mover. The energy source can be as diverse as a water wheel, a horse on a treadmill to a gas turbine.

Not to discourage anyone from designing a press, but rather to understand that there are many many choices, and each choice effects all the other choices. Engineering is a compromise. I will write more bits on each component soon.

And if this is all very confusing, you can easily buy a ready made, safe press that will work first try when delivered and you can then charge on and forge more metal.

This from Alabama Forge Council's *Bituminous Bits,* July/August 2012

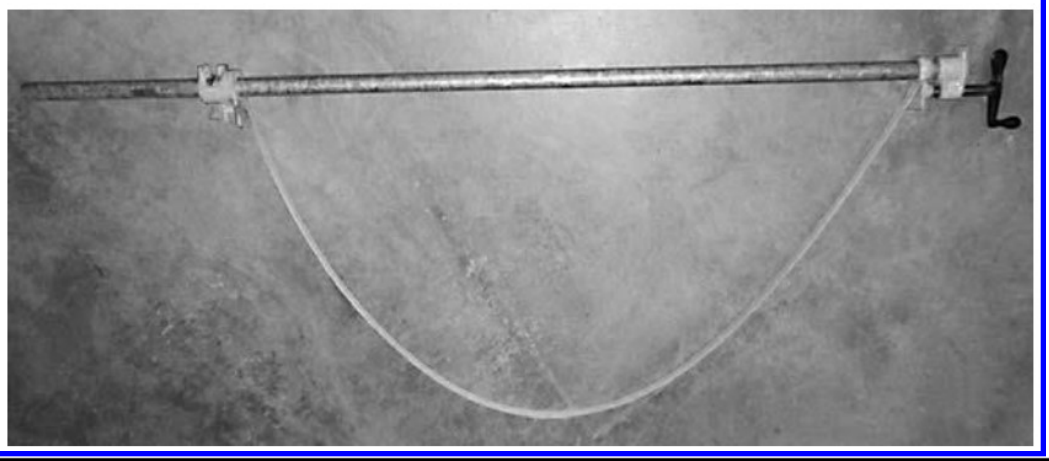
I Thought Everybody Already Knew This

Smooth Curve Jig by Clay Spencer

A length of 1/ 4" x1"

and a pipe clamp

will do the job.



German Arts & Crafts Candle Holder

Made by GOBERG, circa 1910

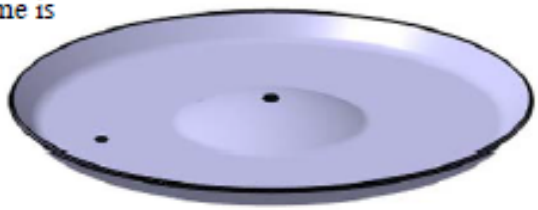
Article by Steven Spoerre, a MABA member

This project is based on an antique fair find. Goggle image searches of "HVB", the logo stamped in the bottom of the holder led to the following background information about the company distilled from several sites. The metal company name, GOBERG, is taken from the middle of Berger's name – huGOBERGer, and a variety of his item designs can be found on the internet through image searches and auction sites. From the mid-1890's into the early 1900's the German and Austrian metal work factories of Hugo Berger produced predominately smoking accessories, candle holders and boxes, that were sold through stores like the Liberty Department store in London, opened in 1875 and later playing a major roll in the Arts and Crafts movement and Metz & Co. started in 1740 in Amsterdam.

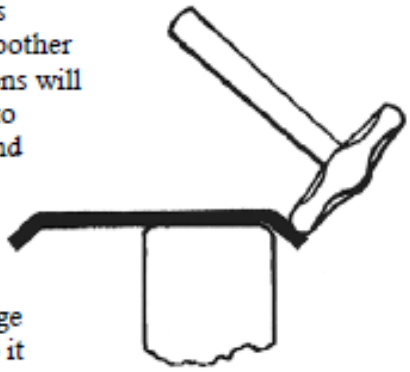
The 7 ¼ inch tall candle holder consists of two forged (stem and collar) and four sheet metal (base, handle, drip pan and candle cup) pieces. Everything is held together with rivets and peened tenons.

BASE

The base blank is a 5 ½ inch diameter circle of 20ga, with a fine scale texture. A ⅜ inch flange is turned up at a 45 degree angle around the outside of the circle. And in the center of the base, a 2 inch wide dome is raised ¼ inch above the bottom surface.



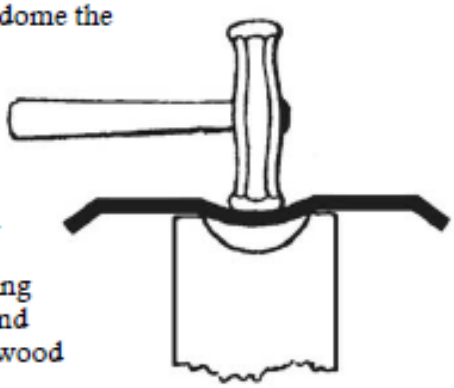
The circular blanks can be made several ways – purchase a cut blank (water-jet, laser or plasma cut), saw it out, cut it out with a throatless or hand shears, or by using a hammer and chisel. Because the base has a small hole at its center (for the lower tenon of the stem), the hole can be made first and used as a pivot/pin center for the plasma cut and saw options, and even the chisel option if a treadle hammer or fly press is used. If using shears, leave ⅛ of an inch of waste to the outside of the line at the initial cut, then trim closer on the next pass for less distortion and a smoother curve. All the options will require some filing to remove any burrs and sharp edges.



To turn up the edge flange, use a cylindrical bottom tool with the top edge slightly radiused (so it won't damage the metal being formed and cause a crack to appear later in the process). Heat the metal and overhang the tool by ⅜ of an inch. Lightly hammer the edge down over the bottom tool as the piece is turned. Or

hammer with the disc held at an angle and work around the edge in several passes alternating between hammering flat on the inside and 45 degrees on the outside also avoid wrinkling the edge. It might help to scribe a line where the two surfaces meet. The bottom tool can be held in the hardie hole or in a leg vise.

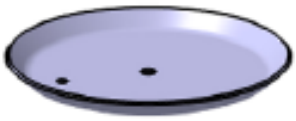
Using a round faced or large ball peen hammer, dome the center of the base up about ¼ of an inch by sinking it into a; 2 inch ID pipe (with a radiused inside edge) or a sinking swage, or the end grain of a hardwood block.



Start hammering around the center hole and work outward in concentric rings – the goal is to stretch the metal evenly and keep the surface smooth.

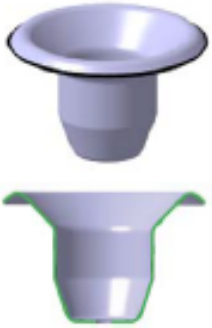
DRIP PAN

The drip pan blank is a 3 ¼ inch diameter circle of 20ga, with a fine scale texture. A ¼ inch flange is turned up at a 45 degree angle around the outside of the circle. Use the same procedure as described for the base, but use a smaller diameter cylindrical bottom tool.



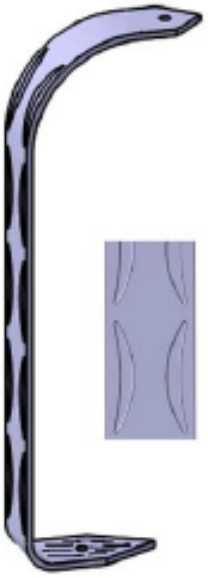
CANDLE CUP

The candle cup is made from 24ga sheet, has a 1 inch ID, is 1 ⅜ inches tall overall and appears to be spun over a mandrel. To forge a cup, start by heating a convenient length of 1 inch black pipe (safety notice: do not use galvanized pipe, the zinc will burn off in the forge and breathing the vapors can cause metal fume poisoning, a cumulative respiratory condition – see Adrian Mulholland's article in the 2015 May-June issue of the Upsetter). Using a guillotine tool, neck down the pipe 1 ½ inches from the end, then put a small chamfer around the pipe by the neck-down to push material towards the bottom of the cup. Thin and flare-out the end out over the horn of the anvil, or a convenient stake, to approximately 45 degrees, taking care not to crack the pipe at its welded seam. True up the edge and leave it as-is, or flatten, or try and roll the edge over like the cup pictured. Lastly, remove the cup from the length of pipe, heat the cut end and flatten it over a mandrel of the appropriate diameter so it will sit tightly against the drip pan.



HANDLE

The handle is made from ¾ inch wide 14ga sheet, and is 9 inches long. The ends are trimmed to points, one at 45 degrees and the other at 60 degrees. A series of decorative arcs are stamped along the edges of the handle, starting about 1 ¾ inches from the end with the 60 degree point. The arcs are about 1 $^{1}/_{16}$ inches long, have around a ¼ inch crown and each are spaced about an ⅛ of an inch apart. The decoration is stamped deeply into the handle and the displaced material does cause swells along the length of the handle. A straight peen texture is an added detail on the top side of the 60 degree point (the opposite side to the arc decorations).



STEM

The stem is forged from 4 ½ inches of ⅜ inch square stock. A taper is started ½ inch from one end and goes from ⅜ to ¼ inch square in a distance of 5 inches, then returns to ⅜ square in the length of ½ inch. A small groove is fullered into all four sides of the stock ⅝ inches from the other end. Four pairs of fuller marks are placed roughly ⅛, ⅜, ⅝ and ⅞ the way along the 5 inch taper, alternating on the diamond. The material swell caused by the fullering process is mostly filed away, and then the areas are forged back down to the smooth taper again, leaving crisp edges on the fullered features. The last ¼ inch of each

end is butchered and forged down to create $^{3}/_{16}$ inch diameter tenons.

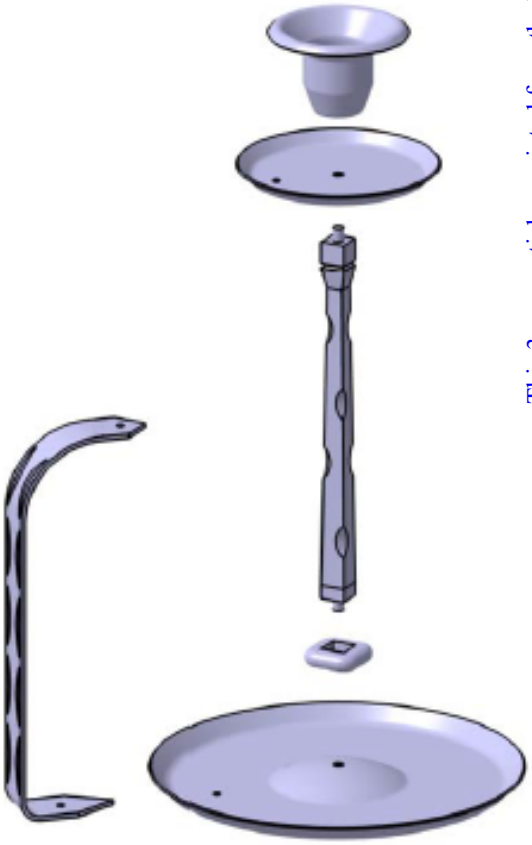
COLLAR

The collar is a rounded band of ¼ square stock that goes around the bottom of the stem and adds some visual mass as it transitions from the stem into the domed area of the base. Three ways to create the collar would be to wrap the collar stock around the stem, then weld the collar ends together while welding the collar to the stem. Another way is to drift a ⅜ square hole into a ¼ inch thick piece of stock, then file and forge the outside edges to a half round profile. A third option would be to upset a piece of ⅜ square stock, then drive a ⅜ square punch into it and let the material naturally swell out to form the rounded outer surface. Leaving the thin layer of material in the bottom of the punched area, drill a through-hole for the tenon through it.

ASSEMBLY

To assemble, dry fit the base, stem and drip pan to determine the handle height needed to fit in between. Place the 60 degree point close to the edge of the domed area on the base and determine where to start the first bend, and then bend it around a ½ inch diameter pin to 90 degrees. The placement of the handle should have it snug up close to the start of the edge flange. Use a 2 inch diameter form to make the second 90 degree bend. Clamp the base, stem and drip pan together and check the fit of the handle between them. While keeping the handle vertical, determine where the rivet holes will be placed on the base and the drip pan. Drill the rivet holes on the handle center line and countersink the upper hole on the underside. Now mark the hole locations on the base and drip pan. Drill the rivet holes in the base and drip pan, then countersink the bottom of the base hole. Using ⅛ inch diameter button-head rivets, attach the handle to the underside of the drip pan, peening the rivet flush with the pan surface. Orient the stem to the base with one of the taper corners pointing toward the rivet hole in the base, then peen it securely to the base. Place the drip pan and candle cup over the upper tenon, making sure to align the handle rivet hole with the base hole, and peen the candle cup tenon down tightly. Lastly rivet the handle to the base, filing the peen flush if necessary.

Apply a dark brown/bronze finish to complete the turn-of-century look. The clean lines and pleasant proportions of this design are well worth the time to work through the project.



This 3 page article reprinted from the Nov-Dec 2018 edition of The Upsetter, the newsletter of the Michigan Artist Blacksmith Association

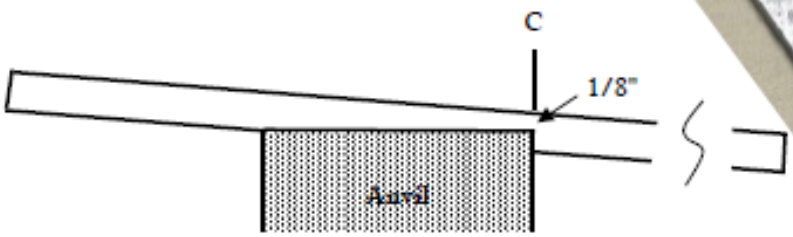
Valentine

By Steve Anderson, a MABA member

Stock: 1/4 x 3/4 x 18-1/2"

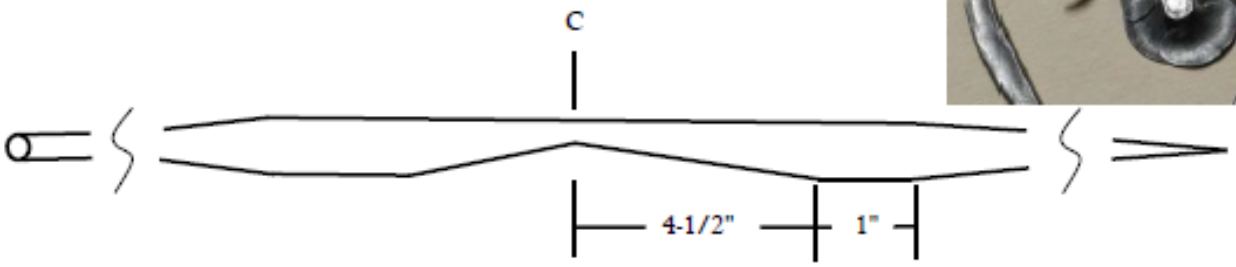
Heart: Starting at the center, use half-on half-off blows to forge stock down to1/8". Then taper back to 4-1/2" keeping the thickness at 1/4".

Repeat on the other end.

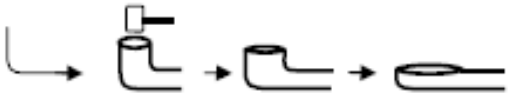


Forge one end to a long taper. About 12", keeping the thickness at 1/4".

Forge the other end down to 1/4" square on the end, with a total length of about 12-1/4".



Forge the last 3/4" to round, bend 90 degrees, then forge down to make a disc for attaching the flower.



Drill or slit and drift the disc to 3/16", then counter sink the back side.

Use the horn to form a heart shape.

FLOWER: Forge a 2-1/2" flower to be attached to the heart.

FINISH: Highlight with brass brush if desired, then coat with Penetrol and 2 coats of wax before assembly, then a final coat afterwards.

ASSEMBLY: Rivet the flower to the heart using a leather disc to protect the center of the flower.

NOTE: For an asymmetric heart add 1/4" of stock to the long tapered side.

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

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February 16 Hammer In
Kenny Dettmer's Shop

15721 S 250W Columbus, IN

From the North: take I 65 S to Ogilville / Walesboro (exit 64) turn. right. Go to the 1st cross-roads (300 W). Turn left. Approx 1 mile to the "T' . Turn left (600s). Go to 250W. Approx. 4 miles to a brick house on your left.
From the South: I 65N to Jonesville exit 55 turn. right, go to road 950 (in Jonesville). Turn left. Go to 250W turn. right. Kenny's house is approx 1/2 mile on your right .

Please bring a dish to share.

December 8 Hammer In

Don Reitzel's Shop
4113 W County Road 900 S, Stilesville, IN 46180

Directions: Take I-70 west of Indianapolis to exit 59 (SR 39). North on SR 39 for 1 mile. Turn left on County Road 900. Shop is about 6 miles on left.