November 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.

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**

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Dates to Remember

Dec 8 IBA hammer in at Don Reitzel's

March 16, 2019 Annual Business Meeting at Kelley Farms

Editors Message

I need to start by apologizing for my tardiness. I had some non-blacksmithing interruptions that delayed this month's Forge Fire. I plan to be back on track in December.

In October we had a small but good hammer in hosted by Jennings County Blacksmiths. The group was able to see the less cluttered forging areas, due to the shop expansion. We also played with the newly installed 50 lb Little Giant.

The December hammer in will be hosted by Don Reitzel in Stilesville. December at Don's has become a bit of a tradition. His shop is large and well heated.

I do not have confirmation of a January hammer in at this time. I believe Gary has something in mind and is firming up the location. In February we will be in Columbus at Den Dettmer's shop. We always have a big turn out at Ken's.

March will bring us to the annual business meeting. Bill Conyers and Bill Newman both have their director terms expiring. I have not heard if they will be seeking re-election. If you have an interest in serving on the board, or in a different capacity, please contact Gary Phillips or any other memeber of the board of directors.

Clifton Ralph 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. Currently Clifton is in poor health. He would really appreciate hearing from his friends in the blacksmithing community. Send cards and letters to:

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

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

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

5) Maumee Valley Blacksmiths
Meet: 2nd Saturday
Contacts: Clint Casey (260) 627-6270
Mark Thomas (260) 758 2332

7) Rocky Forge Blacksmith Guild
Meet: 2nd Saturday at 9 AM
Contacts: Ted Stout (765) 572-2467

9) Whitewater Valley Blacksmiths
Meet: 2nd Saturday
Contact: Keith Hicks (765) 914-6584

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

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

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

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

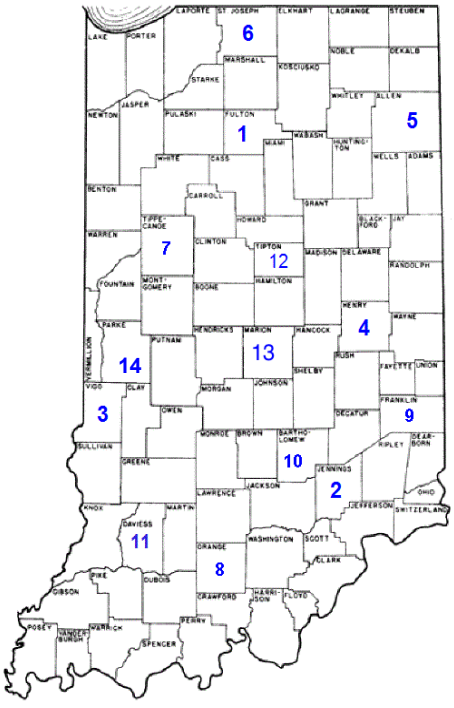
6) St. Joe Valley Forgers
Meet: 4th Saturday at 9 AM
Contacts: Bill Conyers (574) 277-8729
John Latowski (574) 344-1730

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

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

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

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



Jennings County Historical Society Blacksmith Shop

The Jennings County Historical Society Blacksmiths started with Alex Spellman making a twisted handle. Nathan Pelvor then proceeded to make a pair of tongs that anyone would be proud to own. John Lewis, a beginner, made a 'drive-in hook'. Dave Good then made a hold down clamp the hard way, with no power tools. He started with a larger piece and forged it down to get the size he wanted. Next month will be the last meeting at Vernon this year. Dec. will be at John Cummins' , Jan. at Paul Bray's, Feb. at Kenny Dettmer's, March at Kevin Welsh'. Hope to see all of you next meeting. Bring iron in the hat, money and your-self. Paul Bray

Directions to December Hammer In at John Cummins shop:

From Milan, In take IN-350 East to Moores Hill. Turn South on Manchester Street/Palmer Rd. Turn left onto Main then right onto Chesterville Rd. The shop will be on the right. Look for signs.

IBA Satellite Groups and News (continued)

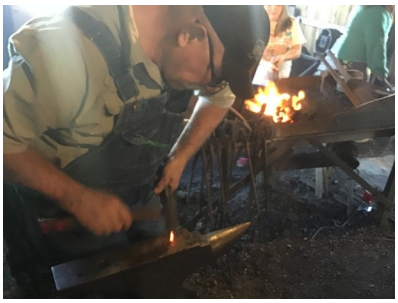
Meteorite Mashers

This month's meeting was held at Butch Spark's shop near English Indiana. While a cold day, 2 forges were running all day as well as a fire pit. Butch's Nieces made us hot lasagna and garlic bread and all acclaimed it to be wonderful. Had several new folks to visit and we had quite a few in the beginners class as well as open forge.
The November meeting will be the "Smoked Turkey Hammer-in" at Jeff Reinhardt's shop in Floyds knobs on the Saturday after Thanksgiving. Jef has promised an extra, extra good iron in the hat as well as sliced smoked turkey for the entree.

Bunkum Valley Metalsmiths

The Bunkum Valley Metalsmiths met Saturday the 3rd with close to 50 in attendance.

We had a great copper jewelry making demonstration by guest Jeff Reinhardt. We were also glad to have 2 more Directors, Steve King and Bill Newman visiting today along with a few other out of town visitors. There was a lot of work done, tools for a muzzle loader rifle, tong making, knives and much more. Joe Godsey made some cable Damascus. The iron in the hat had lots to chose from. The tables were loaded with food and a good time was had by all. Thank you again to Jeff and all our visitors. Everyone is welcome to attend the first Saturday of each month starting at 9am in Odon.



Unusual Ironwork in the Church of Santa Caterina
By Dominick Andrisani

The Church of Santa Caterina in Taormina, Sicily, Italy, was built in the first half of the seventeenth century in the Baroque style. It was built on the ruins of a small Roman theater, the Odeon, partially destroying the orchestra pit and part of the southern colonnade of a even more primitive Greek temple dedicated to Aphrodite. Some of the ancient theater/temple has been preserved and is visible through openings in the floor of the present-day church. Those openings in the floor are surrounded by some very old looking ironwork, the subject of this article. I do not know how old that ironwork is, but it could date back to the construction on the church in the early 1600s.

One section of the ironwork is on the right as you enter the church (pictured at right) and forms a U-shaped barrier to prevent people from falling into the Greco-Roman ruins that are several feet below the floor level of the present-day church. The other U-shaped barrier is smaller and is on the left as you enter on the front wall. The construction of both barriers look to be made by the same blacksmith and of the same era.

What is unique about the this ironwork is that some of the metal joinery is done by dovetail joints. I have never seen this before and am amazed at the workmanship.

Detail from image above

A bit on lubrication of forging tools.

By Jeff Reinhardt

I have experience in both very large industrial shops forging millions of pounds a month, and in my own shop over many years. I will try to translate the industrial experience over to the home shop as I have done. In the closed die forging trade, lubrication or lack can make a die last 100,000 hits (forging blows in that impression) or a couple of hundred. When a set of large dies may cost $100,000+ this is very important. In the large valve shop I worked in, graphite in emulsion was the rule in the early 80's. Had been for maybe a century. But as time moved on the lube industry developed and improved a new better lubricant. These are the alkaline salt lubes.

First lets look at the most severe forgings I have worked with and those are large heavy 6" flanged valve bodies. In these there is a 10" center mass, a 3" neck and the flange is 18" or so. The hot metal scrubs over that neck and tremendous checking and erosion of the hard H-13 dies occurs. Takes lots of tonnage as well. For these we used the industry standard of graphite powder in road tar mixed to the point that when heated with an open flame you got a toothpaste consistency. Every hit produced clouds of smoke from the tar, and dust from the graphite. That dust is respirable, which means it creates black lung in the operators if they breath it. The dies lasted maybe 4000 hits before a 1/4 to 1/2" was ground off the top and the die re-sunk. Since those dies were about 5' by 8' that is a lot of grinding and re-sinking. We switched to an early water based alkaline lube, and the smoke was almost gone no dust, and die life jumped by at least 5 times. In the early 2000's at the Upsetter shop they were using a brand new Henkle lube that was an alkaline salt and it was astounding better then anything I had seen. dies that had been giving 20,000 hits were giving 100,000 and filling out better. tonnage was less and these machines had tonnage monitors and the data was real not a guess. These machines were using a 5% ratio lube to water to pull the heat out of the dies which were making a hit every 6 seconds.

So how does this affect how my hobby shop works you ask? The forge engineers saw my blacksmiths plate on the car and were interested and shared the lube info. They suggested I drain some dregs from an empty tote and try it at home. I did and WOW! I had been using plain water to cool hot cuts and coal dust for punching. I had seen the graphite and soap mixes used by many and watched them just fall off. This stuff made a well attached coating and I can tell you the first hot cut blow sent the hot cut through the iron and into the anvil face something that had not happened before this lube. I experimented and found that a 50:50 mix worked best for how blacksmiths work vs how an industrial press works. Time went by and at a demo Tom Clark was showing how to make a hammer and spilled his graphite in soapy water. He had no more, so I told him that I had this industrial stuff and it was great. He tried it and boy was he impressed. Gave him the quart I had. (He gave me tongs:)) A few weeks later I got a call and he asked could he drain some totes. I said yes if he had a jug. He drove 500 miles out of his way and got that lube from empty totes. The forge engineers saw us and offered him some early alkaline salt lube sample if I would not kill them for having sample without the MSDS as I was also the safety guy. He took maybe 20 5 gallon pails with him. Later he bought this product and resold it

Time went by, and Henkle became very difficult to deal with for tiny orders like a 5 gallon pail. Fuchs stepped up and they offered me a sample. Worked a treat and I have used it since. The BFH team has used it to carve wizards from 3" square stock to cool all the tools. We later did an anchor from 2" round bar and doing the mortise for the vertical bar to a 1.75" square hole was actually very easy with this lube.

A bit on lubrication of forging tools (continued)

So if you like smoke and flames and noxious fumes indeed continue to use coal dust or never-seize, or grease or table salt or heck just spit on it. If you want less effort, no smoke, non-toxic and tools that last much longer, get your Fuchs on. This should be a 50:50 ratio, and lasts for a very long time. For short tools like hot cuts and handled punches a smaller amount works. For long drifts get enough to fill a deep but smaller diameter tank. If you don't spill it it will go for many years in a home shop. Just dip a hot tool in and pull out. if the lube is wet, not hot enough. if the lube sticks above and below the hottest spot redip it is still too hot.

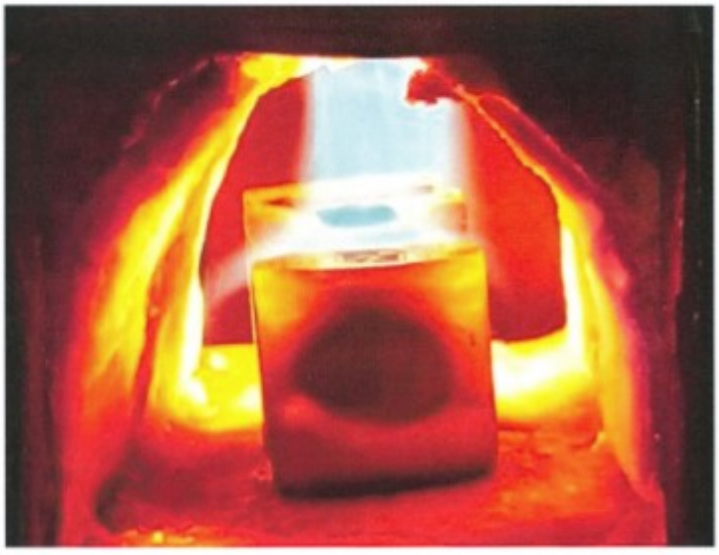
Be aware that no lube can overcome the material properties of the tool. That is; if you get the end of the tool too hot and it mushrooms, it won't weld in but it will become an expensive ball and socket joint. I dip punches and cuts every few hits. The lube makes them move metal like they are on ball bearings so be cautious until you find out the change in resistance.

The product can be obtained from https://secure.anvilfire.com/forge-ease-3512.html

Uniform Heating of Your Workpiece

"Just saw a GREAT picture of a bar of steel heating in the gas forge. I'm always telling my students to think about the bar like a "Jaw Breaker" with all its layers from the skin to the core. These layers need to be at an even temperature before forging after the initial heat. It needs time to soak in the heat but also, bring the bar out to allow it to cycle or cool to a black heat and placing it back in the forge. Cycling the steel this way lets the bar core remain and increase its heat while the outer layers cool. By replacing the steel right back in the forge and heating the outer layers to match the core prevents "Red Short" stress fractures when forging. Especially for stock greater than 1" in cross section. The bar is most malleable where ever it has the greatest heat so, if the outer layers are hotter than the core, you'll cause separation and stress fractures between the core and outer layers when forging. This also is the case when working the steel too cold while the core is still at or near forging temperatures. This is why instructors often tell you to stop striking the steel at a black heat. That average temperature is 900°F when the bar looses its glowing heat."

- Kelly Kring
Photo Credit: Colin Fung



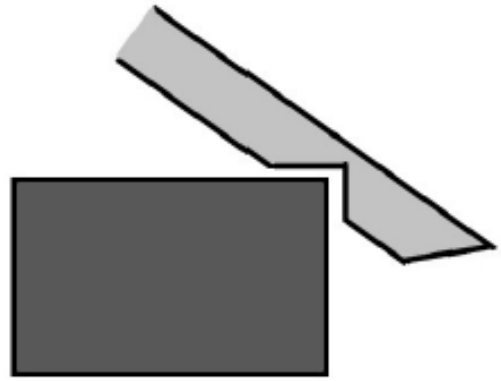
Reprinted from Irons in the Fire, the newsletter of the Central Virgina Blacksmith Guild, July 2017

Forging a Tasting Ladle

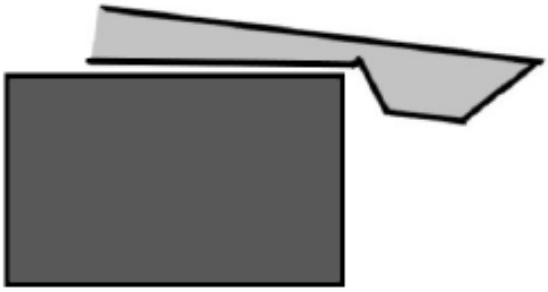
This was one of my first projects when I started blacksmithing in the last century, and one of the early lessons in our Blacksmith Boot Camp class. It's a great way to start thinking in 3 dimensions, and helps build hammer control.

Start with a 6" piece of 1/2" square stock. Upset a blunt taper on 1 end.

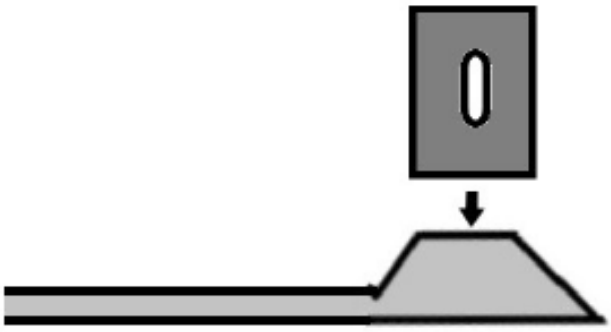
Turn the piece over. Drive the piece into the anvil, at an angle, to form a complementary taper about 1 1/4" - 1 1/2" back from the first taper.



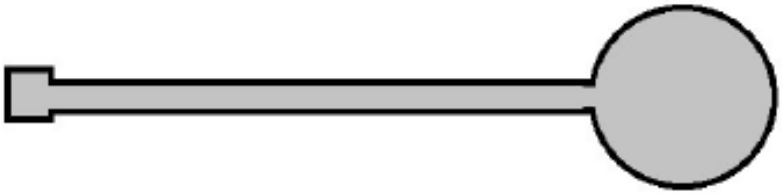
Drop your tong hand down, then hammer the back taper shallower. Work this down to make the handle (you can leave a "blob" at the opposite end for a bean or hanger, if you like.)



Flip the spoon over, and use the pien of the hammer to start spreading the blank for the bowl. Concentrate the blows in the center of the "bowl mass" to establish the depth.

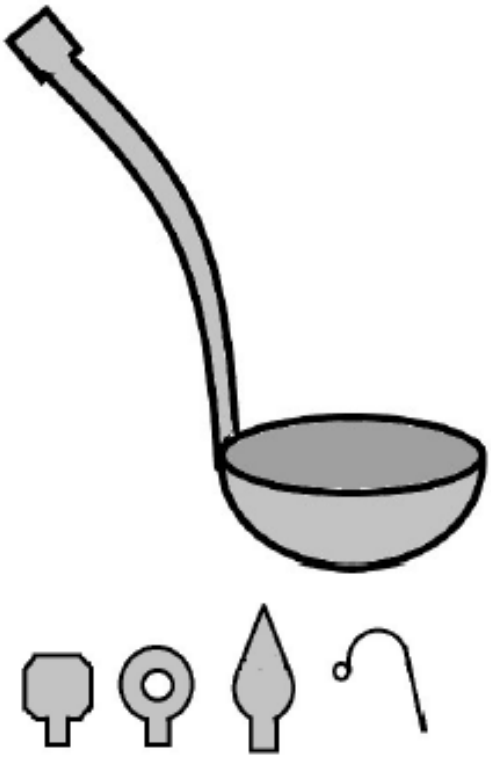


Spread the rest of the mass to form the "bowl blank." Use the pien of the hammer. Try to do this not by moving the hammer from side to side, but by hammering the same area on the anvil, moving the piece beneath it. Try rotating the blank under the hammer, with the center of the bowl being the pivot point as you move the blank around. Be careful to avoid any cold shunts. You'll end up with something like this.



From here on, you're essentially forging sheet metal, so monitor your heats closely to avoid burning. Using a ball pien, sink the bowl in a swage. If you don't have a swage, carve or hammer a circular depression into a piece of hardwood (preferably end grain.) It won't last as long, but will work just fine. Curve the handle into a graceful arc, making the ladle, well, ladle-like.

Then there's the matter of what to do with the finial (the end opposite of the bowl.) There are a lot of options. You could simply file down the corners, making it into a faceted ball. Those look quite elegant. You could hammer in the corners to make a ball, then take it even further, flatten the ball and punch a hole in it. One of my favorite ways to treat this is to draw it to a point, then spread to make a leaf or flame shape. Scroll the leaf over to make a hanging hook. Some students forego the blob on the end altogether, just drawing the handle to a point then forging a hook. There are thousands of other things you can do. Come up with something cool, and surprise us!



This article reprinted from November 2018 edition of The Virginia Blacksmith. The newsletter of the Southwest Virginia Blacksmith Guild and Central Virginia Blacksmith Guild.

Atticus's Elephant

Atticus McFadden-Keesling,
SOFA demonstration 2018
Drawing and write up
by Steve Alling, a MABA member

Atticus's demonstration at S.O.F.A. featured his use of hand held air hammers which he uses to produce a variety of animals. He uses an industrial riveting gun, they are very expensive but he said you can get reconditioned ones on Amazon or use a less expensive automotive type air hammer. All these processes described below can be done with hand tools, but the speed that he was able to achieve with the air hammer was amazing. He doesn't use any of the mechanisms that hold the chisels in the hammer; he holds them in by hand. He stressed that this tool was much louder than power hammers and chop saws so hearing protection is a must.

1- Draw out the trunk under the power hammer; it should be slightly rectangular with the corners slightly broken.

2- Use tool "A" which is a flattened ball to drive the trunk down nearly 90 degrees to the bar. It's important to not extend the bar any farther than necessary to avoid bending the body.

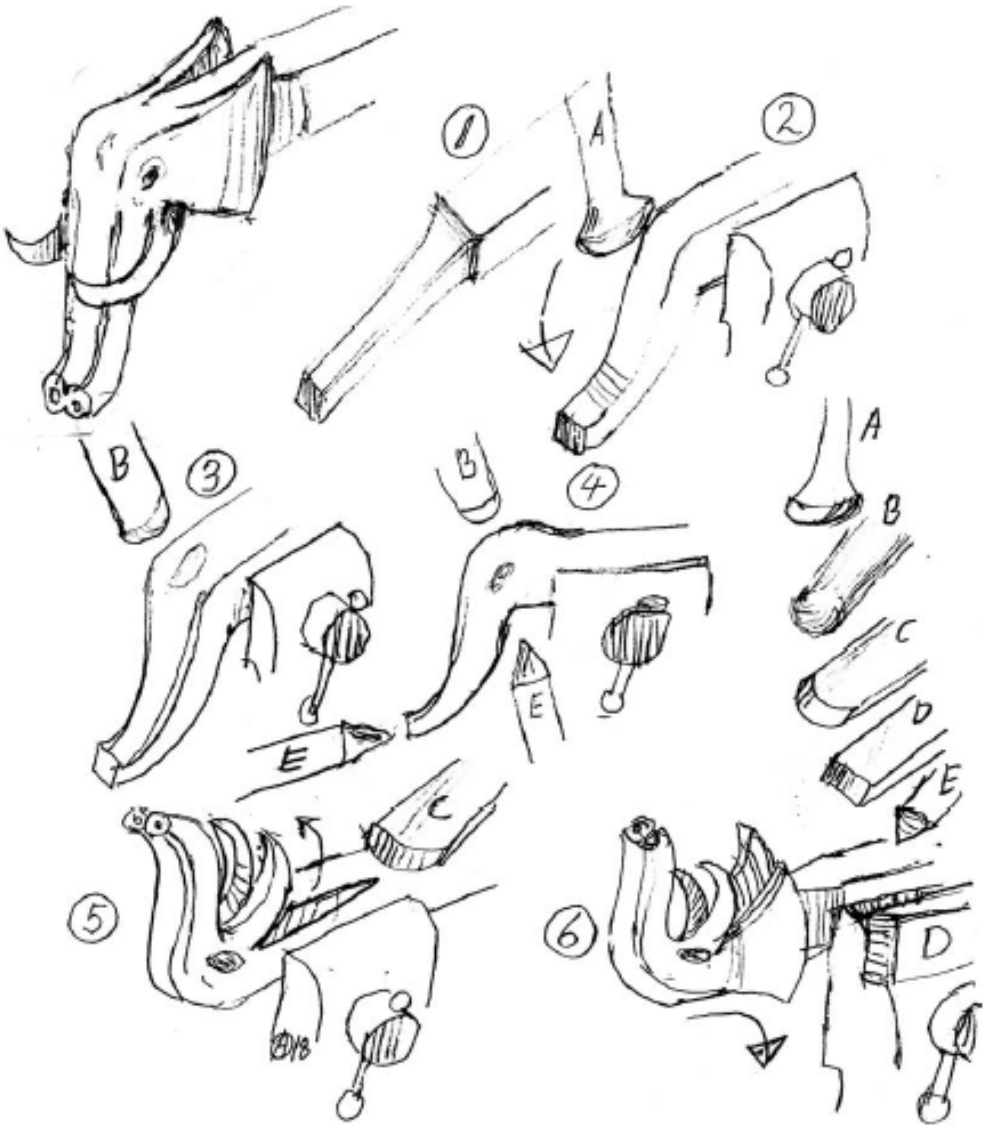
3- With tool "B" which is a round ended tool that has been slightly smashed make a dimple in the forehead.

4- With tool "B" drive in where the eye will be causing the forehead to slightly bulge, then with tool "E" which is a center punch place eye. Use tool "E" to place nostrils.

5- Raise the tusks from the bar with tool "C" which is a gouge sharpened on the inside. Atticus sharpens these cutting tools with a very stiff angle; he says this causes the cut metal to curl up.

6- With tool "D" which also has a very stiff angle separate the ears and use tool "A" to arrange them and the tusks.

It was with great pleasure I got to watch Atticus demonstrate. He came with his Dad to my shop when he was 14 years old for open forge and came off and on several times.



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

The Break Test ~ Becoming Necessary

Mike Mumford, Ridgecrest

In the May/June 2017 edition, we ran Dave Smucker's article about performing the break test on tool steels. That test became necessary for me last month.

I had made some hand tools to take along to Argentina and then broke three out of five while they were in use. For the trip, I quickly re-forged the tool and took advantage of the toughness of basic tool steel in an unhardened state.

When I got back to my shop, I took a couple of test samples and followed the protocol of the break test.

The order for that particular material had been a problem. I ordered back in 2017 through Amazon, trying their tool steel supplier. The shipment got screwed up initially, but Amazon fixed it right away. However, what I received was marked -*1*. I had ordered W-1.

Assuming it to be W-1, I hardened the Argentina tools in water and tempered to straw. When I got back to my shop following the Argentina trip, I ran through the break test process using hardening solutions ranging from brine to oil.

The result? That tool steel must have been O-1. Spark test showed lots of carbon, similar to W-1, but hardening in water resulted in a tool that shattered easily. Hardening in oil resulted in a tool that would break, but not easily. Combining an oil quench plus tempering to almost blue gave a tool that would not break until hit with a very large amount of force.

Conclusion? (1) The supplier sent the wrong material, and (2) the break test identified the proper heat treat protocol for this material.

Note. For the future, I'm considering making up a break-test section for any new tooling that I make. ♣

Note how the test pieces broke very differently. Not visible in the photo, the grain structure was also very different at the break. These are pictures of the untempered tests.

This article reprinted from Nov-Dec 2018 edition of California Blacksmith.
The newsletter of the California Blacksmith Association.

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

Farrel Wells *Membership Secretary*
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Dunkirk, IN 47336-8807

First Class Mail

Address Correction Requested
If Undeliverable return to
sender

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.