N.J.B.A. Newsletter

NJBA Volume 9, Issue 1 04/24/04

Editors Soapbox

Well it's a rainy Easter afternoon and I'm grabbing a few minutes between having to do things to work on the newsletter. We have just completed two successful workshops, an anvil repair and gas forge workshops. Many thanks to those who coordinated and helped with these events. By the time you read this the Meet in Suffolk County at Bruce Ringier's shop will have finished. We have a pretty full schedule of events coming up this year so make some time and come out to as many as you can. Hope to see you soon
Larry Brown Editor

Upcoming events for 2004

Get you calendars out and mark these events down. For those on the web bookmark our web site and check for meet information. Remember most of our meets have an "Iron in the Hat" drawing, so be sure to bring something.

May 16th, 9:30—Kerry Rhoades demonstrating at the Silver Decoy Winery in Hightstown, NJ.

June 19 - 20th, 9:30—Cold Spring Village. The main meet is on **Saturday the 19th** with demos on Sunday. Details on Page 3.

July 7-11th , ABANA Conference in Eastern Kentucky University. Details on page 3.

July 21-25th, Monmouth County Fair. The meet officially on Friday Night at 7 pm, help is needed on Monday night to set up and Sunday afternoon at 6 pm to break down. Details on page 4.

September 17 –19th, 10 AM Washington Crossing Park, Engine Demonstration. Details in next newsletter.

October 3rd, Peters Valley Pig Roast, Details in next newsletter.

September ?, Hammer-in at the Red Mill Museum in Clinton, NJ. Details in next newsletter.

October 3rd, Walnford Day, Walnford Park
Details in next newsletter.

Kerry Rhodes at the Silver Decoy Winery in Hightstown

May 16th , 9:30
Kerry Rhoades is a full time blacksmith who owns and operates "Forged Creations", located in the center of historic Delaware City, Delaware. Kerry Rhodes is now in his mid 40's. He started smithing about 15 years ago and has been at it full time since 1998. He studied at Campbell school and worked under John Elsworth, Master Smith of Lewis, Delaware. If anyone has eaten at the cafe at Mike's Harley in Wilmington DE, Kerry did all the metal work in there.
Kerry plans on showing us: forging a wizard, forging a mouse, copper reposse, log tongs, and hammer technique ala Uri Hoff, and any requests we might have.

Directions:
Direction to **Silver Decoy Winery,**

From the North:
Take the NJ Turnpike to Exit 8, Hightstown, take Rt. 33 West 1.8 miles thru town to Airport Rd., turn left onto Airport Rd. (You will see a store called The Bike Rack at the corner) go .8 mile to the end of the road. Turn right onto CR 539, go 1.5 miles to the first light, turn right onto Windsor Rd., go .4 mile to # 610, winery is on the left

From the South:
Take I 295 or the NJ Turnpike to I 195 East, go to Exit 8, take CR 539 N. towards Hightstown, go 4.2 miles to the first light, turn left onto Windsor Rd. go .4 mile to the Winery, # 610 Windsor Rd.

From the East:
Take Rt. 33 West thru Hightstown, then follow directions from North.

From the West:
Take CR 571 into the center of Hightstown, at the light turn right onto Rt. 33/571 then follow direction from North.

NEW!!!
Official NJBA Address

NJBA
P.O. Box 761
Mt. Laurel NJ 08054

The old address was:
NJBA, P.O. Box 195
Howell, NJ 07731
This will still be active for a while but please note the change and start using the new address.

The NJBA Web Site!

The NJBA Web Site is up and running at:
`http://njba.abana-chapter.com/`
The Newsletter is at:
http://members.bellatlantic.net/~vze25jcc/index.htm
or the site may be linked to from the NJBA web site.

Rather than use room in the newsletter, All correspondence between ABANA and NJBA is now being posted on the NJBA web site. If you cannot access it there, contact me and I will send you copies

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Meet in Cold Spring Village Cape May, NJ June 19-20th, 2003

The New Jersey Blacksmith Association will hold a general meeting and demonstration at Historic Cold Spring Village (HCSV) in Cape May New Jersey. The meeting will take place on Saturday June 19th. There will be demonstrations on both Saturday the 19th and Sunday the 20th so if you can't make Saturday come out Sunday. The meeting will coincide with HCSV's "Men and Machines" event. HCSV is a 19th century village so period costumes are encouraged. NJBA members not wearing costumes are encouraged to wear NJBA t-shirts. Demonstrators should be in costume or be wearing a NJBA T-shirt. Lunch on both days will be provided to NJBA members. On Saturday we will probably have lunch in the grange - always a big favorite and family members are invited.

There usually is no "Iron in the Hat" at this location. We need members to bring portable forges and anvils for the demonstrations. Members bringing forges and other equipment should be there an hour earlier at 9 am. If you are interested in being a period demonstrator or have any other questions contact:

David Macauley, 732-206-1568,
732-420-4792 drmacauley@att.com

Directions: Take exit 4A south from the Garden State Parkway and follow the signs to Historic Cold Spring Village 720 Rt. 9 Cape May NJ 08204 (609) 898-2300.
This year they are requesting that we register for their records. We will have forms there or you can pre send the information to them, including: Men and Machines event, Dates you will attend, Name. Phone # and or e mail, Address and state no fee.
Historic Cold Spring Village, 720 Route 9, Cape May, NJ, 08204, Phone: (609) 898-2300 Fax: (609) 884-5926, www.hcsv.org

2004 ABANA Conference Richmond, Kentucky July 7-11, 2004

The 2004 ABANA "Design and Build" Conference. The conference is being held on the campus of Eastern Kentucky University (EKU), in Richmond, Kentucky. Conference Chairperson Dave Koenig is continuously working hard to produce an informative and exciting conference filled with plenty of activities for the whole family!

The Opening Ceremony, featuring the keynote speaker Melvin Rose of Melvin Rose Industries, will launch the five day event on Wednesday evening, July 7, 2004. Albert Paley will present a slide lecture at 8 p.m. that same evening in the brand-new 400 seat Student Center Auditorium. He will also present a second lecture Thursday afternoon, July 8, at 4:00 p.m. Also on that Thursday evening will be the formal opening of the Members' Galleries which will begin at 7:00 p.m. and end at 10 p.m. Thursday, Friday and Saturday will be jam-packed with presentations by our demonstrators, shows in our members' galleries, vendor and tailgating sales, auctions, Iron-in-the-Hat, and a general membership meeting. There will also be craft classes including metalwork, jewelry, appliqué, and stained glass, self defense and martial arts classes, computer-aided design classes, and charter tours of the Bluegrass Region. Sunday morning after breakfast will be open for everyone to leisurely round up the troops and make their way back home.

Maegan Crowley and Chris Winterstein are responsible for assembling the impressive array of national and international demonstrators. They will show you hot and cold forging, ferrous-and non-ferrous metalwork, knife-making techniques, repoussé, and highlight the processes that are involved in the realization of actual product from the design phase. Our demonstration schedule will begin each day at 8:30 a.m. and go until 11:30 a.m. when we break for lunch. Demonstrations then continue from 2:00 p.m. to 5:00 p.m. each evening.

We are also happy to have Tim Ryan coordinating a team to run the on-going silent auction as well as the ever-popular live ABANA auction, both fueled by members' donations.

The EKU conference site offers options for "cold-tent camping" or RV parking, if you prefer it to the campus' dormitory-style lodging, and the area provides near-by campgrounds with RV dump stations. And yes, your pets are welcome as per our simple guidelines! Please also see our list of hotel accommodations in Richmond and note that any persons with special needs in terms of ADA compliant accommodations can contact Michele Devine for assistance. The EKU food service schedule provides breakfast from 7:00-9:00a.m., lunch from 11:00-1:30 p. m., and dinner from 4:30-6:30 p.m.

Have questions about the campus, dorms, meal options, or other information you don't see listed here, please see the web site for a page of Frequently Asked Questions

These are great meets if possible try to get to this one!
Contact:
Michele Devine, M-F 9 am - 4 pm EST, Phone: 706-310-0323. E-mail: conference@abana.org

Mail to: ABANA Conference, PO Box 816, Farmington, GA 30638 • Fax: 706-769-7147
http://www.abana.org

Monmouth County Fair General Meeting East Freehold Park, NJ

July 23th, 2003 7PM

NJBA members will be providing a blacksmithing demonstration in conjunction with the Longstreet Farm Exhibit during the County Fair running July 21th - 25th. The fair times are Wednesday through Thursday 5 PM - 11PM, Friday through Saturday 11AM - 11PM, Sunday 11AM - 6PM. The general meeting will be held Friday Night starting 7 PM at the NJBA demonstration booth. Look for the Longstreet Farm Exhibit.

Blacksmiths are encouraged to submit some of their work for a display at this venue on Friday night. All work will be displayed at the exhibit. This is a great opportunity for us to advertise NJBA and individual members. We can distribute business cards, brochures and talk to the public regarding our work.

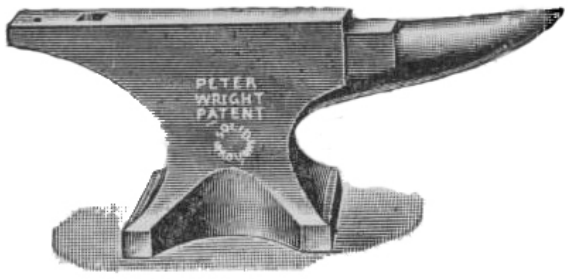
A forge, several anvils, some tools, stock and Coal will be kept at the fair site for demonstrators.

We intend to set up our demonstration area on the Monday before. Please check with David Macauley (Directors Page) as to the times and locations to help. with the setup. We intend to tear down the demonstration on Sunday July 25th at 6PM. We really would appreciate your help setting up and tearing down.

From Garden State Parkway:
Garden State Parkway to Exit 100, Hwy. 33 west. Follow Hwy. 33 to Kozloski Rd., turn right. Follow signs to Park. State Hwy. 9 to Hwy. 33 east, south of Freehold. Follow Hwy. 33 to Halls Mill Rd. North exit. Follow Halls Mill Rd. north to intersection. Road name will change to Kozloski Rd. Follow Kozloski Rd. to Park on left.
From Rt. 18;
Rt. 18 to Exit 22, Rt. 537 west. Take Rt. 537 west to Kozloski Rd., turn left. Follow to Park on right. It has also been recommended that to avoid traffic approach from Rt. 537

For more information contact:
David Macauley
732-206-1568 or drmacauley@att.com.

Free passes have been available for demonstrators in the past, but we need to know who wishes to demonstrate by June 30th, 2000. For general information on the fair call: (732) 842-4000.



Rob Hudson Demo

Report by John Chobrda

On Sunday Feb. 8, Dan Cruzan was gracious enough to open his shop in South Jersey for a blade-forging demo by Rob Hudson, Master Blade Smith of Rock Hall MD.

Rob opened with a talk about his background, his feelings about knife making, and the advantages of a forged blade over a blade ground from a blank. He also explained why a custom made knife was superior to a mass produced item.

The hands on portion of his demo started with him forging a practice blade out of a ½ by 1 inch piece of plasticine clay. Rob explained that he does this to work out the steps in forging a blade to the final shape he is aiming for. When he was satisfied with his clay form, he placed a ½ X 1 piece of W2 into the fire for his blade, He stressed that when forging a blade try to hammer equally on both sides of the stock and keep checking the work and keep it straight. He showed that if the blade is pointing to far up or down it can be forged using a wooden slab on the anvil and a wooden hammer. Rob adds a mild steel tang to his knives, (he gas welds this on using a nickel bearing rod) he does this because he peens the tang over to secure the handle and guard to the blade essentially making it one piece. Once the blade was forged to shape he annealed it by bringing it to critical temp. cooling in air, bringing it to critical temp again then putting it in annealing medium (in this case the blade was wrapped in kaowool) at this point we broke for lunch to let the blade anneal.

After a lunch of subs provided by NJBA and a large pot of homemade beef soup made by Dan Cruzan, Rob rough ground and filed the blade to its finished shape, then put a fine belt onto the square wheel grinder and gave the blade a final clean up before hardening. The blade was cleaned three times using lacquer thinner to remove all oils and fingerprints. He then used a mixture of Satanite (Harbison-Walker Ind.) and Kitty Litter thinned with water to paint a thin coating on the blade. After this dried he added a heaver layer on the back of the blade to introduce a pattern on to the blade and keep it a little softer. The clay mixture helps minimize warping and prevents scale. He then prepared his fire and quench for hardening the blade, for a quench Rob uses light vegetable oil pre heated to 450 degrees. He built a small cave in the coal fire using pine slabs; he stated that when they are burned they form a small, dark, charcoal oven that keeps oxygen away. The blade was slowly and evenly heated to critical temperature (Rob checks this with a small magnet on a wire that he touches to the blade in the fire) then plunged in to the oil and held still until boiling stopped. The blade was removed and checked for any warping, Rob explained that you now have about 45 seconds that you can correct any warping, after that the blade becomes too hard. The clay was cleaned off the blade using a brass scrapper and tempered. Tempering is done in a small toaster oven at 450 deg., the blade is placed in the oven, brought to 450 and held for ½ hour, this is done twice.

Rob's knives are handled in walnut epoxyed and tangs peened making a tool that will not come apart. For any one interested Rob holds knife-making classes that will walk you through the entire process at his forge in Maryland, for details please contact Rob at,

HUDSON KNIVES
Rob Hudson
22280 Frazier Road
Rock Hall, MD 21661
(410) 639-7273

Furnace Town Meet In Snow Hill, MD

Report by Bruce Freeman

Marshall Beinstock, and I drove down to Furnace Town on Friday to attend the demo and workshop by Walt Scadden. Due to inexplicable magnetic forces, we ended up at Jos. Fazzio's in Glassboro, from which we weren't able to extricated ourselves till about 3 pm. However, this still left us plenty of time to get to Furnace Town and to attend the slide presentation.

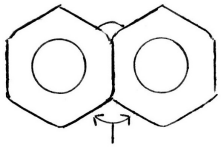
The demonstration on Saturday was of marine hardware. Walt was the blacksmith on the reconstruction of the Armistad, and had considerable familiarity with marine hardware before that as well. He demonstrated making a jib hank, an oarlock and some aspects of making an anchor.

On Sunday, we each chose a project to work on. Marshall chose to make a pair of oarlocks, and executed them with his usual elegant aplomb. After flirting with an anchor or sand anchor (grapple with flukes, not points) I chose to make a boat hook for a friend. This turned out pretty good. All-in-all, a weekend well spent.

Notes on the Furnace town Demonstration

Courtesy of Marshall Bienstock

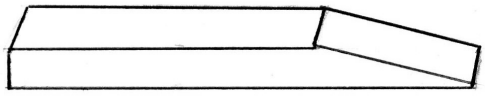
Drill Bit Angle Gauge



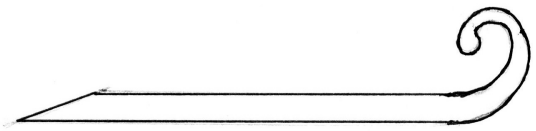
Drill Angle

JIB HANK

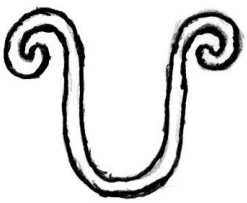
Holds sail to wood slide
Start with 1/2" Sq. about 7" long
Will need a 1/2" round bottom swage



Heat 1 - Taper 2-3" on one end
Heat 2 - Repeat on opposite end
Heat 3 - Start swaging one end
Heat 4 - continue down length of bar using hammer face
Heat 5 - Use cross peen to widen out in swage
Heat 6 - Work entire length in swage. Take a red heat

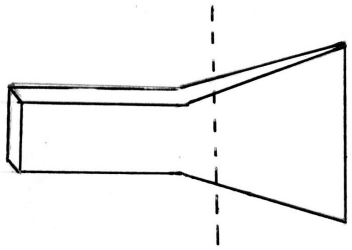


and scroll one end towards curved surface
Repeat other side
Take a red heat in the center of the piece and curve scroll back around.Curved side will be on the outside

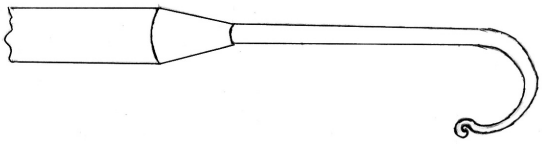


Boat hook

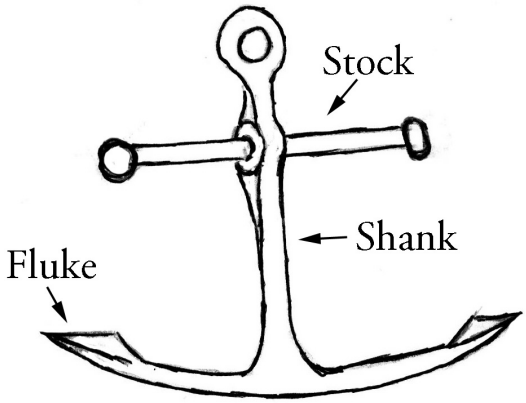
1/4 x 2" flat - Peen one end to a flat taper
Cut off



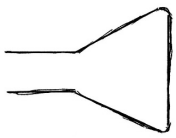
5/8 x 18" round
Taper one end to a point
Scroll end
Finish bend around anvil horn
Forge weld taper to rod
Heat and flux both pieces
Put together and reheat
Weld using swage on bottom
Walt uses 7014 rod if he wants to forge the weld afterwards



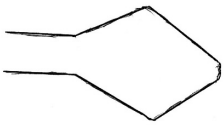
Anchors



Fluke 3/4" round
Upset one end

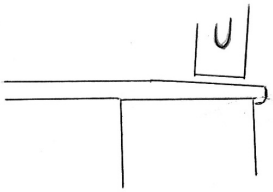


Start pointing end
Leave end thick for strength

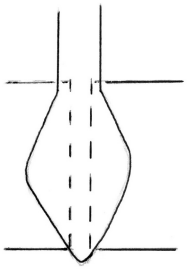


Forge a ridge in vise

Side View

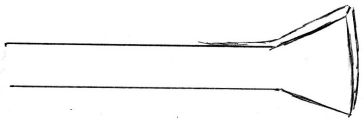


Top view



Shank

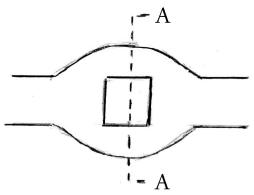
Bottom end
Upset end then flatten to a wedge shape (for strength)



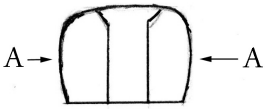
Top end split out for holes for chain and stock
Stock weld collars around ends of bar to form balls, first one end and then the other after inserting it through the shank. End is bent if it is meant to be folded for storage.

Oar Lock

Start similar to jib hank
after swaging mark center for slitting hole
Scroll ends
Bend to final shape, curved side will be on the inside



Slit and drift hole
Shank
Form Square tenon to fit above hole
Taper other end
Flatten end of tapered end for oar lock retaining pin
Heat and insert and set tenon
Some pictures will be posted on the web site.



Gas Forge Workshop

By Jeff Morelli

On April 3rd NJBA members got together to build 21 single burner gas forges.The plan was to roll 12"x12"x12" cylinders, line them with 2" of Kaowoll, install a supported kiln shelf on the bottom, an insulated rear door and a burner assembled from new parts including an adjustable regulator. To keep costs members would have to provide their own fire brick for the fronts.
At 9 AM we split into teams for rolling, welding, burner assembly, cutting and fitting the Kaowoll, sheet metal work, leak testing the hoses, etc. Most fabrication was done by lunch break since many special parts had been made in the previous few weeks.
By 2:00 the first forge was being tested by Marshall who gave a lesson on how to light the forge adjust test the flame. Twelve forges were sold and taken home by NJBA members, who were eagerly awaiting the following weekend to light them - the kiln shelves needed to cure another week and then be heated slowly.

Special thanks go to Marshal Bienstock for use of his shop, John Chobrda for buying the Kaowool and burner parts, Bruce Freeman for casting the kiln shelves, Dave Macauley and Tom Eden for pre-fab work, Bruce Hayes, Larry Brown, Mike Erdie, John Chobrda and Marshal for welding. If any NJBA members are interested in buying one of these "Must Have" forges, give Marshal Bienstock (directors list page 2)a call, they are a bargain at $200 apiece for members.

Casting "Kiln Shelves" for Gas Forges

Bruce Freeman

Forms were made using 3/4" plywood, covered with

plastic (garbage bags cut open). (It would have been better to have made more of an effort to stretch this plastic tight, as wrinkles cast into the shelves.) These were divided by means of nominally 1x2 (3/4" x 1.5") furring strips. Since the shelves were to be 7" wide by 12" long, 12" lengths of furring strips were placed between, and perpendicular to, longer pieces to form a grid. The furring strips were mounted to the plywood with 1 5/8" coarse wallboard screws.

The casting material was a (non-insulating) castable refractory cement, rated to 2800 F. Two 50-lb bags (about $34 total) were needed to make 21 shelves. The shelves were reinforced with 1/2" 304 SS wire clote (of 1/16" wire - slightly smaller wire would have probably sufficed), which was purchased in 12" x 24" pieces from McMaster-Carr (for about $13 ea). Each was cut using a heavy shear into ~6.5" x 11.5" pieces.

The refractory cement was mixed as per instructions, an entire bag at a time. Each shelf form was filled about halfway, then a piece of the wire mesh was inserted firmly. The form was then filled to the thickness of the form (3/4") or sometimes slightly thicker.

After setting two days, the wallboard screws were removed and the cast shelves broken apart from the furring strips. (The cement adhered somewhat to the furring strips, and had to be broken away gingerly. A wax or other mold release would have helped.)

These shelves need to be cured slowly before being brought up to a red heat.

Shelf Legs for Gas Forges

Bruce Freeman

Ice cube trays were used as molds for casting legs from refractory cement. (Egg cartons might have worked.) In retrospect, a mold-release should have been used, as the cement tends to adhere even to plastic. Insulating castable refractory cement was prepared as per instructions and troweled into the trays. The trays were covered with cardboard and left to set for two days. Unfortunately, when the trays were examined two days later, the cement was still wet, with no apparent setting whatever. When it had dried, it merely crumbled.

This fiasco was apparently due to the fact that the bag had been broached in 1998. It had not been waterproofed afterwards and, apparently, had picked up water in the intervening years. This was unfortunate, because ice-cube sized lumps of refractory would have been perfect legs for the shelves, six to eight per shelf.

Instead, ~1" thick slabs were cut from noninsulating fire bricks using a chop saw with masonary blade. (This was a messy, dusty process, requiring goggles and dust mask, however, attempts to cleave these bricks with a chisel were not successful.) These pieces of brick apparently function acceptably as legs.

(Note: in the April, 1998, gas forge workshop, bottoms were cast in place in the forges using insulating refractory cement. That procedure was effective, but inconvenient.)

Propane Forge Safety

by Bruce Freeman, with contributions by Robert Grauman .

Facts about Propane

1. Propane is a liquid in the cylinder, but is burned as a gas.
2. Propane gas must be tapped from the top of the cylinder.
3. As the propane vapor (gas) is pulled off, evaporation of more liquid propane within the cylinder cools the cylinder .
4. As the liquid propane cools, the pressure of the vapor above it drops.
5. Overheating liquid propane will cause dramatic, and potentially catastrophic increase in the pressure of the vapor above it. Most commercial cylinders have a pressure relief device. If this opens the cylinder will not explode. but it could vent the entire contents of the cylinder.
6. Liquid propane is not only flammable. it's an effective solvent. (The gas is not a solvent.)
7. A propane cylinder could leak, and it's best to assume it *does* leak.
8. Propane + air in a confined space (i.e., indoors) is a recipe for an explosion.
9. Propane is denser than air and can settle in basins or run along the ground to a source of ignition, then

flash-back. It could also drain into a sewer and cause an underground explosion hazard. It can fill up a basement, ignite from a furnace or other appliance, and demolish a house.

Facts about Regulators

10. Every regulator has a diaphragm. a poppet valve and several fitting. Any of these could leak.
11. In particular, the poppet valve, the diaphragm and the pressure gauge contain mechanical parts. Any mechanical part is subject to failure with use, sometimes suddenly.
12. Regulators are pressure-control components, not shut-off valves. A separate shut-off valve should be located immediately upstream of a regulator. (This is always the case anyway when the regulator is directly connected to a propane cylinder, but should *also* be the case if the regulator is mounted remote from the cylinder on pipe or tubing.)
13. Regulators are typically designed to handle only gases. Solvents can harm internal components and cause dangerous breakdowns (eg. of the diaphragm or poppet valve).

Facts about Refractories

14. Castable refractories require water to mix, set up overnight, and then must be fired slowly to cure. Too rapid heating the first time will cause spalling of the material. (This spalling can be a *dangerously violent* steam explosion.)
15. Any refractory that may have become wet should be heated slowly to dry it before it is exposed to full heat.

Facts about Combustion Gases

16. The two major combustion products of any carbon fuel (including propane) are carbon dioxide (CO2) and carbon monoxide (CO).
17. Other combustion products may also occur, depending upon the fuel and the combustion conditions. For example, when methane is first ignited, considerable formaldehyde is formed. When coal is incompletely burned, many complex combustion products ("smoke") are formed. These products are generally more harmful than CO or C02, but are present at much lower levels. Propane, like methane, is fairly clean-burning.
18. Carbon dioxide is only slightly poisonous. It is the waste product of animal metabolism, so animals have a pretty high tolerance for it. While it is an odorless, tasteless gas, it does combine with water to for carbonic acid which has an odor and taste. Anyone who has drunk soda water (a solution of carbon dioxide, with no other flavors) and belched knows what carbonic acid tastes and "smells" like.
19. Carbon monoxide is another animal. It is a potent poison, with an action rather like cyanide. Apparently its action is somewhat less severe than cyanide. but since you are more likely to be exposed to CO than to CN, that won't comfort your next of kin much. Symptoms of mild CO poisoning include headache.
20. While both CO and C02 are environmental pollutants, the quantities that a forge will produce are of no particular concern to anyone but you.

Therefore I suggest the following safety measures:

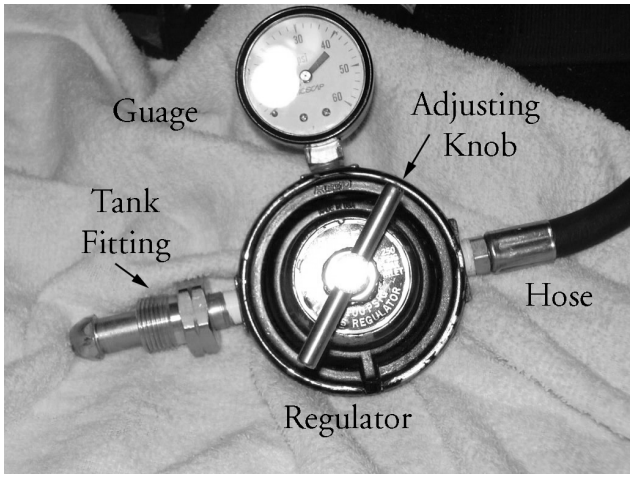
In General

1. Never allow a propane cylinder to tip while in use, as liquid propane may enter the regulator, possibly damaging the regulator and rendering it unsafe, and definitely resulting in a surge in propane flow..
2. If (during the cool months) your propane cylinder cools so much that you can't get the pressure you need, place it in a tub of cold water. Never apply artificial heat. (The tub-of-cold-water trick is not the best solution. Your propane cylinder is too small for the job, and you should consider using a larger one, or two cylinders in parallel, using an R V tandem valve for this application.)
3. Never allow the heat from the forge to heat the propane cylinder.
4. The regulator and hose are vulnerable components and should be treated gently, protected from heat and harm (watch where you wave that hot iron) and inspected before use. Solvents, sunlight, and other deteriorating influences can also affect the hose.
5. The first time you fire up a forge, do so delicately. Leave the doors open and heat at a slow rate. This will cure the refractory. Place the doors back in position after firing the body of the forge for a period of time.
6. Place the forge on a non-combustible surface. Keep combustibles away.
7. Have a dry chemical fire extinguisher ("ABC") handy.
8. Never leave a hot forge unattended, even if the fuel is shut off.
9. Never store a propane cylinder indoors.
10. Preferably operate a propane forge outside. If that is impossible or impractical, operate the forge *only where very* substantial ventilation is provided. This

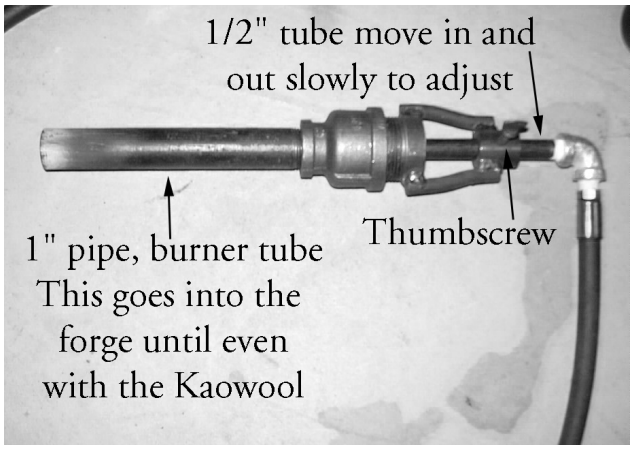
means, either *no walls* (roof only) or *forced ventilation*. This precaution is necessary both to prevent fire (propane leak) and to prevent CO poisoning. If you ever suffer a headache while working with any combustion equipment, *get out of there!*

Assembling your NJBA Forge

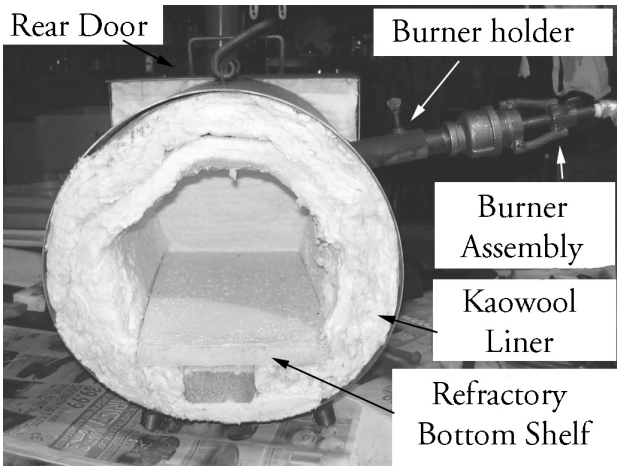
11. For NJBA forges, the burner assembly is comprised of a ½" pipe with a brass orifice screwed on one end and a rubber rube crimped on the other end. The rubber tube should be connected to the regular. This ½" pipe fits within a 1" tube that is welded to a flange that is in turn screwed into a 1" pipe. A thumbscrew is used to secure the position of the ½" pipe within the 1" tube.



12. Insert the burner assembly into the 1.25" tube that has been welded to the side of the forge. The 1" pipe end of the burner assembly should be flush with the insulating durablanket. Make sure the brass end of ½" tube is within the flange but not all the way into the 1" pipe. Tighten the thumb screws the secure the assembly to the 1.25" inch tube and the ½" pipe within the outer 1" pipe.



13. Place the door on the back of the forge.
14. Optionally pile firebrick in front of the forge up to the level of the kiln shelf. Place firebrick to form a square opening in front of the forge large enough for your stock. This tends to contain the flame and heat within the forge more. Be sure you don't seal up the front of the forge.



Suggested Procedure for Lighting a Propane Forge

15. Inspect your propane cylinder (especially the valve), your regulator (especially the connector to the cylinder and its O-ring) and your burner (especially the hose) for any signs of wear or problems. Do not install the regulator if you see any sign of problem.
16. Install the regulator by hand, without tools, until the nut (left-hand thread, remember) is fully seated. *Immediately* tighten the nut with a wrench. (If you wait, you might forget and have a very serious propane leak when you turn on the propane.) Do not over tighten the nut, as this will only ruin the connectors.
17. Make sure the forge is safely situated (no combustibles nearby), the burner is properly and firmly installed, and all is well before lighting the forge.
18. Before lighting the forge, ensure that there is proper ventilation. If you are outside or only under a canopy, no problem. If you are inside, provide forced ventilation. At a minimum, this should consist of a high-powered roof or window fan (preferably blowing out) and an open door or large window, *turn on the fan before* or *immediately after* lighting the forge. (The noise of a fan

may interfere with your ability to judge the burning conditions of the burner. If so, be sure to turn the fan on within a minute or so of lighting the burner.)

19. Recheck the regulator connection to the cylinder, and recheck that the knob is loose (set to zero pressure). To check for any leaks apply a little soapy water to the fitting – bubbles appearing will indicate a leaky valve or fitting. Then light a propane torch and hold it near the burner opening inside the base of the forge (off to one side so you don't blow it out when you turn on the propane to the forge). [Some folks roll up some newspaper, light the paper and place it in the forge, then slowly turn on the gas. Be careful, the pressure of the gas can blow the burning paper right out of the forge. Placing a lighted match in the forge and slowly turning on the gas will also work., David Macauley]. First turn on the propane at the cylinder valve, and then slowly turn the regulator knob to bring the pressure up to an appropriate value. The forge should light easily and stay lit. If it doesn't something is wrong.
20. If you even *think* anything has gone wrong, *turn off the propane at the cylinder valve*.

Use and Adjustment of the Forge

21. After the forge is lit and the flame is stable, make any adjustments necessary, to the pressure to get a good stable burn.
22. Loosen the thumb screw securing the ½" pipe to the 1" pipe. Move the ½" pipe in and out of the 1" pipe until a neutral flame is obtained. Tighten the thumb screw. Be very careful not to touch the forge housing it will get hot!
23. I f you haven't already done so, turn on your exhaust fan.
24. If there is a flame shooting out of the forge (i.e., between the bricks typically used as a front door), you have incomplete combustion in the forge. With the forge burner adjusted to this mixture, your forge cannot give you maximum heat and, in addition, formation of toxic carbon monoxide may be greatly increased. Adjust the burner until the flame recedes into the forge.

Shut-Down of the Forge

25. Always shut down the forge by turning off the fuel at the cylinder, *then* backing off the regulator knob (as a safety precaution.)
26. When finished a forging session, remove the regulator from the cylinder and take the cylinder to its outside storage area at once. Make sure you replace the plastic plug in the propane cylinder.
27. Remove the back and front doors (i.e., the firebricks) and set these aside on *non-combustible* surfaces. Remember that they are *easily* hot enough to start a wood fire.
28. Allow the forge to cool for at least a half an hour before you leave the area. This is to prevent accidental fires from going undetected.

I think you're going to enjoy using your new gas forge. Please keep safety in mind so you can enjoy it for a long time.

Help!

Peters Valley

Peters Valley is making another request for donations. If you have a little extra consider helping them out.

Help Culver Brook Restoration Foundation Restore the Garris Center Blacksmith Shop.

The Garris Center Blacksmith Shop is being restored to working condition as a living museum. Once completed, the blacksmith shop will be open to the public with live demonstrations by local and invited blacksmith artists. Your donation will be instrumental in the restoration of this important part of Branchville, NJ, history. Please send tax deductible donation to CBRF Blacksmith Ship, P.O. Box 447, Branchville, NJ 07826. For donation of tools or to volunteer your services, please contact Bob Leach at 973.948.2897.

Blacksmith Positions

Please contact them directly if interested

From Basto Village

Our volunteer blacksmith, William Futer, was recently forced for personal reasons to give up demonstrating for visitors to Batsto Village, a nationally-recognized historic site located in the New Jersey Pine Barrens. We are hop-

ing that one or two of your members might be interesting in assuming his responsibilities since the blacksmith played an integral role in 19th century life at our site.

I would appreciate it if you would let any interested volunteers know that we would be grateful for even one or two days a month of service. We have a complete blacksmith shop ready to go--except, of course, for the smith, himself. Any assistance that you can provide in this regard will be greatly appreciated.

Please feel free to contact me if you have any questions or concerns. I look forward to hearing from you at your earliest convenience. Thank you very much for your attention in this regard.

Sincerely,
Patricia A. Martinelli
Resource Interpretive Specialist 1
Batsto Village
Wharton State Forest
4110 Nesco Road
Hammonton, NJ 08037
609-561-3262 (phone)
609-567-8116 (fax)
Pmartin53@wmconnect.com

LMC Corporation

I am assisting the US Branch of the French company LMC, which participated in the restoration, and renovation of the Statute of Liberty. They have built upon this experience and are now in need of additional skilled craftsman for the fabrication and installation of highend architecture metalwork.

LMC is the US subsidiary of the French company named Les Metalliers Champenois S.A., which is located in the eastern part of France near Reims and specializes in fine architectural metalwork and historic restoration. In 1984, LMC was commissioned to recreate the new torch and gilded flame for the Statue of Liberty in the New York Harbor. In 1986, upon successful completion of this challenging project, the US company, LMC Corp. was created and a workshop opened in Paterson, New Jersey (12 miles west from New York City).

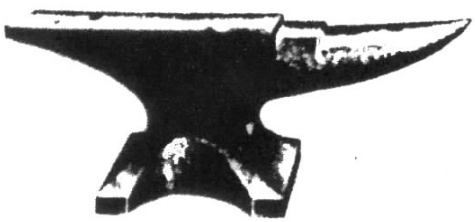
Among the 21 employees working at LMC, 13 are highly skilled European artisans. LMC creates many things out of metal, from garden gates to balconies to ornamental French doors. The most demand is for decorative stair railings. LMC works mostly in French styles of the eighteenth, late-nineteenth and early twentieth centuries. More recently, two stair-railing projects were completed in a contemporary style made of titanium. LMC finishes include wrought iron with gold leaf, faux bronze, or hammered blackened, highlighted, and waxed wrought iron. LMC serves two types of clients, highend residential interior/designers/architects and preservationists.

On behalf of LMC
Ross P. Miller
mobile: 973-769-0099
fax: 908-696-1407
rosspmiller@aol.com

Extra!

Chili Recipe

(Something Different– LB)
Mrs. Tucker graciously agreed to publish her White Chicken Chili recipe:
2-3 cans white beans, 1-2 cans butter beans, 1 cup shoe peg corn, 1 can hominy, 6-8 cups chicken broth, 4 cups cooked chicken, 1 big onion, 2 cloves garlic (minced), 2-3 cans chopped green chilies, 2 tsp. dried oregano, 2 tsp. ground cumin, ¼ tsp. cayenne pepper (optional). Cook chicken in water and save broth, may add more canned broth to increase amounts. As an after thought to Mrs. Tucker's recipe, you can add more beans if you are cooking for a large crowd, remembering – beans, beans the musical fruit, the more you eat the more you --.
Keep the coals hot.
From the Indiana BA



Iron Symposium

Cooperstown, NY
October 9, 10, 11, 2004

This Fall will see the first ever "pre-industrial iron symposium" Hosted by the Farmer's Museum of Cooperstown, NY, this three day event will bring professionals and enthusiasts from across the country together to participate in activities, demonstrations and lectures related to the production of bloomery Iron. New York state was once a leader in the production of iron and iron work in the United Sates and bloomery iron played an important part in the State's as well as the Country's economy. Join us over Columbus Day weekend as we explore this exciting early technology through a series of lectures and demonstrations.
On the first day (Sat, October 9), we will light a charcoal fire, on the second day we will fire up a smelter, and on the third we will go into the shop to fashion an artifact from the iron we have made. Lectures and demonstrations pertaining to the making and use of early iron will be held throughout.

We have some wonderful demonstrators lined up including:
Paul Spaulding, NY
Forge work (19th c. blacksmithing)

Lee Sauder, VA - Smelting Demo and lecture (contemporary bloomery smelting.)

Darrell Merkowitz, Canada - Forge work and lecture and exhibit (Viking-age ironwork)

Daniel Karem, Canada -Lecture, Slide show and exhibit (Iron work of the Spanish Rennaissance)

Tres Loefler, NY -Forging demo, lecture (Colonial tool making)

Barry Keegan, NY - Lecture, Demo (Backtracking the iron age, stone-age smithing), (Charcoal Making) (Eight ways to make fire)

Michael McCarthy- Lecture, Demo (Forging Blooms), Slide show (The blacksmith shop)

Ticket Price will $150.00 for this three day event, and will include breakfast and lunch on each day. One day tickets are $75. Any specific lecture can be attended for $5. Call Karen Wyckoff at 1-607-547-1410 or 1.888.547.1450 for Registration and Details.

If you have any questions, feel free to get in touch with me! michael@hammerinhand.com (or leave message with Karen)

Hope to see you there!

Rivet Source

From Doug Learn

A good source for iron and copper rivets (and nails, screws and other fasteners in many metals) is R. J. Leahy Company. They carry many sizes and styles at prices (even with shipping) that are hard to beat with fast turnaround and friendly service. And regardless of cost, they have types and sizes that local hardware stores cannot (or will not) supply. The contact information is www.rjleahy.com, or 1475 Yosemite Avenue, San Francisco, CA 94124-3321. 800 514-4106.

New England School of Metalwork

2004 Workshop Season
Guest Instructors form Around the Country
May – Dereck Glaser, Susan Madacsi
June – Charley Orlando, Doug Merkel, Clay Spencer
July – John Rais
August – Steve Yusko
September – Rick Smith, Mindy Gardner, Bob Becker
October – Rob Kirchner, Zack Noble, Mike Greene, Todd Greene
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Call to register 1-888-753-7502 or online at www.newenglandschoolofmetalwork.com
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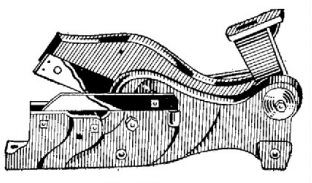
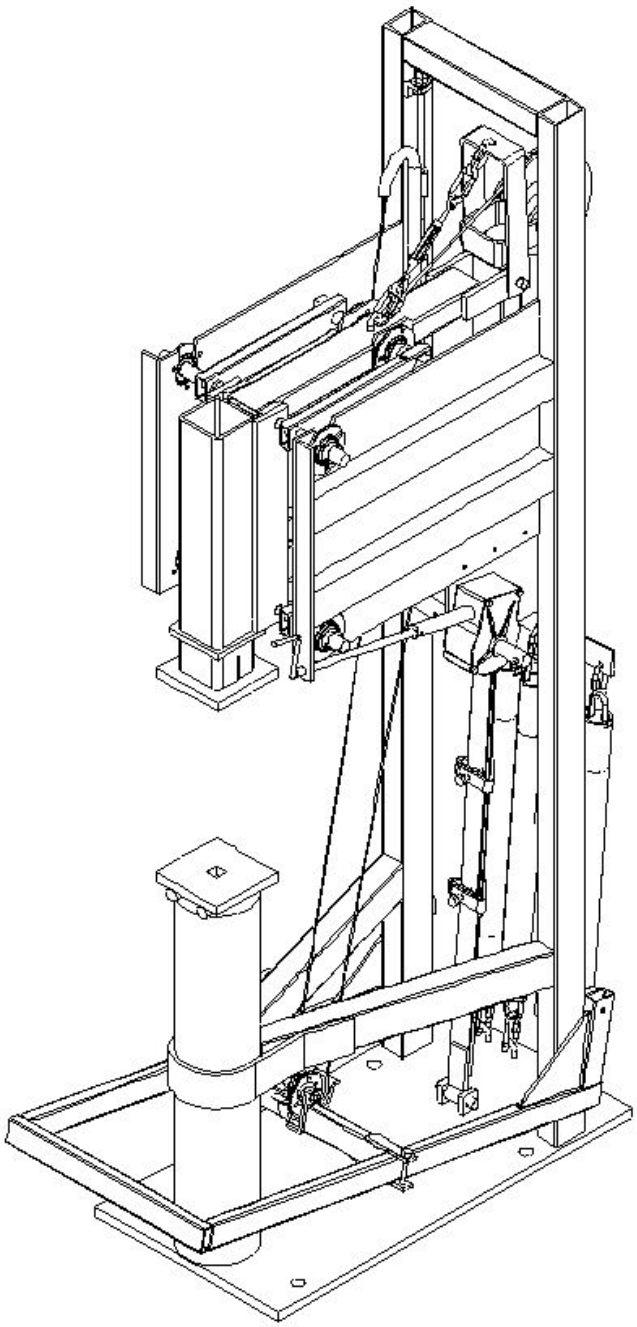


The Grasshopper Treadle Hammer



I have kept NJBA members posted on the development of the Grasshopper Treadle Hammer since its inception in 1998. As you may recall, I released preliminary plans for the machine in 2000. I am now pleased to announce that the final plans for the Grasshopper Treadle Hammer are now available.

This final design incorporates all "fixes" and design changes I have made to the prototype (in Marshall Bienstock's shop) over the past four years. Most notable among these changes was to the "kickback" adjustment. As noted below, this separate adjustment has been completely eliminated, and has been replaced by a one-time adjustment made when setting up the hammer after construction.

The Grasshopper Treadle Hammer has a weightless, vertical-motion ram with a 34 inch stroke. The anvil is free of obstructions in all directions, including 22" above. The return stroke is provided by a small " kickback" spring which only stretches at the end of the ram stroke (where it is least perceptible to the user). In other words, your leg doesn't have to work to stretch the springs.

The treadle is adjustable to allow for different tool heights, and the point at which the kickback cuts in is adjusted automatically with the treadle adjustment. Hence, there is only one adjustment needed while hammering, and that is made quickly and easily from the front of the machine - so quickly, in fact, that it can be done during a heat.

The only other routine adjustment of the treadle hammer comes when changing top tools. A weight set is employed to compensate for the weight of the top tool. Weights of equal mass to the top tool are removed from the ram tube, keeping the ram in balance with the springs.

The plans consist of 100 engineering drawings and twenty pages of assembly and adjustment instructions, including stock list, parts lists, and recommended tools and machines. The great detail of these drawings makes the construction and assembly of the machine fairly simple.

In the USA only, the price for the plans is $25, postpaid. Send your money order or check (US$ drawn on a US bank) to: Bruce Freeman 222 Laurel Place Neptune, NJ 07753. The website is http://www.monmouth.com/~freeman/bmf/grashopr.htm . Bruce Freeman

Blacksmithing Workshops and Classes:

Peters Valley Craft Education Center
19 Kuhn Rd., Layton, NJ 07851 (973)948-5200
pv@warwick.net www.pvcrafts.org

Academy of Traditional Arts
Carrol County Farm Museum
500 South Center St. Westminster, MD 21157
(410)848-7775 (410)876-2667

Touchstone Center for Crafts
R.D.#1, Box 60, Farmington, PA 15437
(724)329-1370 Fax: (724)329-1371

John C Campbell Folk School
One Folk School Rd.
Brasstown, NC 28902
1-800-365-5724 www.folkschool.com

Red Mill Forge
Contact Adam Howard about workshops and per diem use of the shop (908)735-4573

BLACKSMITH TOOLS FOR SALE!

John Chobrda

Has a large selection of tools for sale.
Anvils – Forges - Leg Vices—Blowers
Tongs – Hammers
Will also repair and/or resurface Anvils
Call John for prices and availability
Evening (609) 443-3106

Wanted: Donations for the NJBA Trailer
We need hand tools, files,
Tongs (Old, new and repairable),
Safety Glasses and assorted rivets.
Look around and see what you have to donate.
Contact; Dave Macauley, Directors list, Page 2

Business Members

We would like to thank those who joined with our new Business Membership category
Please show them our support

Ginty's Welding Service, Inc
2 Lee Mack Ave.,Danbury, Conn, 06810
Timothy Miller, Artist Blacksmith,
Bayport, Long Island, NY (631)419-1185
Marshall Bienstock
663 Casino Dr., Howell, NJ 07731
(732) 938– 6577, (732) 780-0871
Lincoln Wolfe
11 Overlook Terrace, Bloomfield, NJ 7003
(973) 338-3913
John Chobrda, Pine Barrens Forge
231 Morrison Ave., Hightstown, NJ 08520
609-443-3106

Open Forges

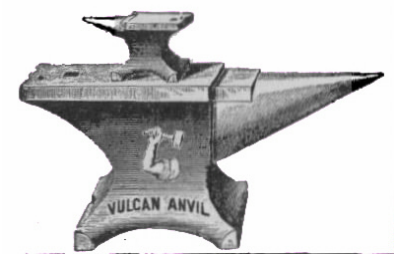
We are looking for members who are interested in opening their forges up to members as a open forge. This does not have to be a weekly forge as is Marshall's the others can meet once or twice a month. Please contact, Larry Brown, Editor.
We want to encourage all to join us at:

Monday Night Open Forge in N.J.

Marshall Bienstock is hosting an open forge in his shop at 7 pm almost every Monday night (Please call ahead on holidays to make sure , (732)780-0871)

Open Forge in Long Island

Sunday from 10:00 am to 6pm.
Starting the 1st Sunday in November (closed Nov. 9 NJBA Meet) until the end of April. Please call ahead to confirm and get directions. Ron Grabowski, 110 Burlington Blvd. Smithtown, NY (631) 265-1564
Ronsforge@aol.com



Learn to do a Drop Tongs Forge Weld!!

Class for beginners by Gray Smith
Article and illustrations by Dave Smucker
AAC Newsletter July / August 2001

At a recent meeting of the Clinch River Blacksmith Guild, Gray Smith taught a group how to make a drop tong forge weld between two pieces of 1/2 by 1/2 stock. Three new blacksmiths who had never made any type of forge weld were all successful in making a good weld on their first try. I wish I had been that successful on my first attempts to make a forge weld - mine ended up on the floor. Frustrated, it was quite awhile before I was ready to again give this a try and finally learn how to make a good weld. In this article I will take you through the steps that Gray taught - and his key learning method - practice cold - before you try the actual weld.

The drop tong forge weld takes its name from the fact that of the two pieces we want to weld together, one of the pieces is held by a set of tongs - that we position on the far side of the anvil - then hold in place with the other piece to be welded - drop the tongs and pick up our hammer to make the weld. Easier to see - than to describe - but we will take you through the steps in this discussion. This weld is used to Join two pieces of equal cross section, or nearly equal cross section. Often one of the pieces is much shorter than the other - such as a handle being welded onto a fireplace tool or a rein being welded onto the jaw of a tong half. For the purpose of learning how to make this very useful weld Gray had the new smiths weld a 6 to 7 inch length of 1/2 by 1/2 half square stock to a 24 inch length of the same 1/2 by 1/2 material. (Hot rolled A36).

The first step is to upset the end of both pieces so that its cross section is greater than the original 1/2 by 1/2 half - about 5/8 by 5/8 for a length of about 3/4 inch. This is done so that we have extra material to make the weld with and that as we dress the finished weld we have material to return it to the original cross section of 1/2 by 1/2. If we didn't do this then the area of the weld would end up under sized as we finish out the welding process. To make the upset we heat the end of the piece to be upset then hammer the end with a series of short rapid blows. Rest the piece to be upset over the anvil holding with the 'tong' hand and directing the blows back toward you from the far side of the anvil.

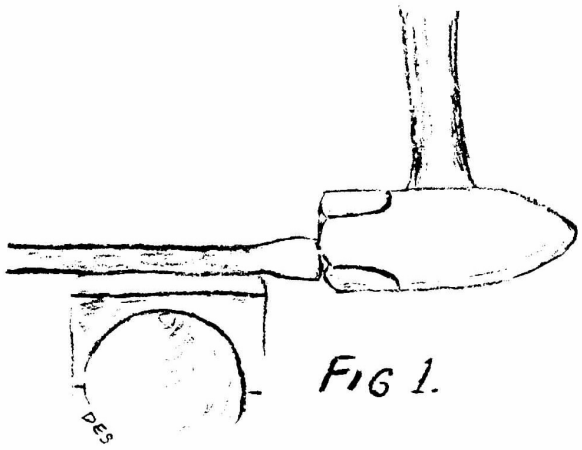


FIG 1.

Remember here that as Gray says, 'heat is your friend' start your upsetting with a good yellow heat on the piece to be upset. Try to keep the heated section as short as possible so that you limit your upset to the area close to the end of the piece.

Now with both pieces having an upset, you need to put a scarf on the end of each piece. Both scarfs will be the same. The scarf basically provides a tapered end that

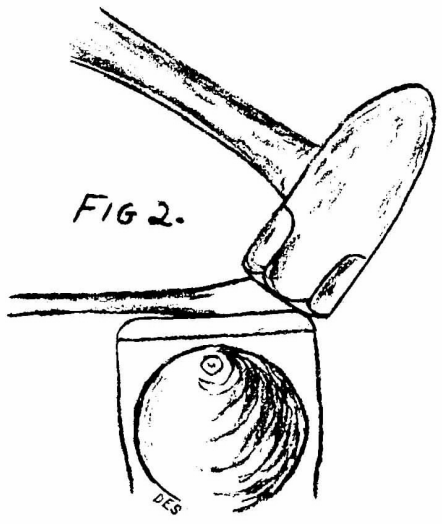
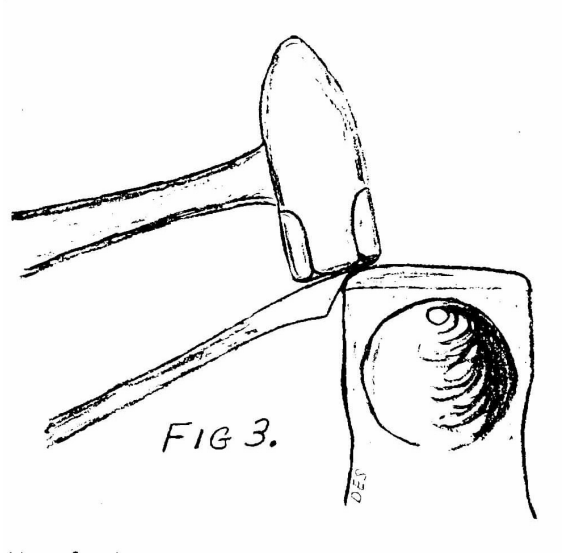


FIG 2.

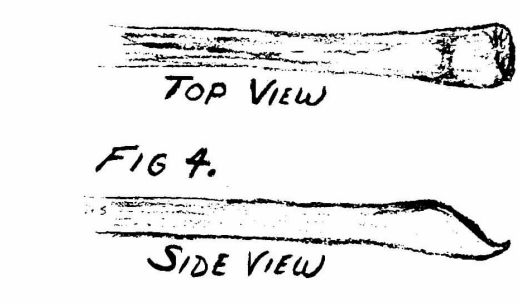
will be overlapped with each other in the actual welding process. Heat your piece again to a good yellow heat and then form a short taper on the end of each piece. Some widening or fishtailing at this point is OK, keep the taper short - about 3/4 of an inch or so.

Gray makes this taper on the far side of the anvil as shown in Fig. 2.

Next we need to turn up the very end of the scarf. You can do this by flipping the piece over and turning the



end on a rounded edge of the near side of your anvil. Fig. 3 shows how your finished scarfs should look. This little turned up end does two things. First it gives you an end that is less likely to be burned when heating in your fire. Secondly it keeps this small tip off the surface of the anvil and gives it a better chance to stay hot and make a

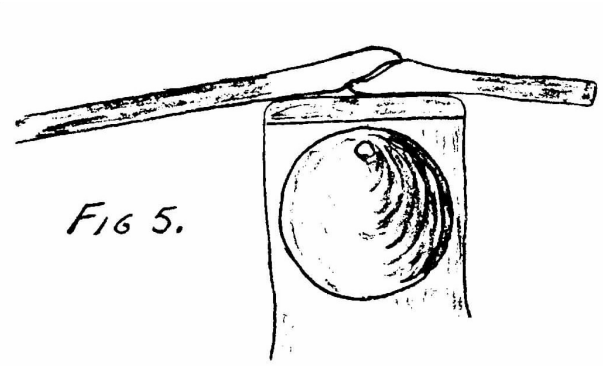


good weld.
Your finished scarfs should look like Fig 4.

You now have the stock prepared and are ready to make your weld - except here is where Grays teaching really helped these new blacksmiths make a good weld the first time. Gray had them practice the steps and motions of making the weld 'cold'. He wanted them to practice these steps 10 times cold This lets you learn the motions and get very comfortable with the actions you have to go through to make the weld.
So let's lay out those steps and practice them - we will come back to talk some about your fire and actually make the weld after you have completed your 10 cold practice welds.

1.) Place your tools where you will be ready to use them. Key here is to place your welding hammer where you can quickly pick it up just after you drop the tongs. You can lay it on the anvil or on a small table or stand very close to your anvil.
2.) With your long piece held in your 'tong hand' pick up the short piece with the tongs held in your hammer hand.
3.) Heating in your real fire you will be heating these with the scarfs turned up for most of the heating operation. You will have fluxed the welding surface too. Most of this heating is done with scarfs turned up so that you don't over-heat and burn the tips of the scarfs.
4.) In your real weld you will be reaching welding heat - then turning the piece scarf down for the last portion of the heating cycle. This gets the welding surface to the final welding heat. It is worthwhile to practice steps 3 and 4 so that this whole process is almost automatic.
5.) Come out of your (practice cold fire) and strike the two piece together to remove excess flux. 6.) Turning to your anvil, place the short piece - held by tongs in your hammer hand - from the far side of the anvil. Keep the tongs low to the surface of the anvil so that the scarf is up - and held off of the surface of the anvil. This keeps it from cooling took quickly. Keep in mind that you will have turn this piece over so that the scarf is up - from the way you had it in step 4.
7.) Place the long piece held in your 'tong hand' on the near side of the anvil also with your hand low to the surface of the anvil so that the 'hot' end is off of the surface - with the scarf facing down. As you do this your will want this piece to be above the short piece held with the tongs
8.) Now 'lever down' your long piece onto the short

piece, pinning the short piece down on the surface of the anvil. See Fig. 5 on the next page.
9.) Wow - we are finally here - Drop the Tongs, and quickly pickup your hammer' don't set them down, don't lay them on a stand - drop them'
10. Hammer your weld to stick the pieces. Work the top surface with several quick blows, then flip the piece 180 degree and close the scarf from the other side too. Don't work the sides at this point unless you are sure you have a 100 percent solid weld. Rather, add a little flux and go back into your fire and reheat back to a welding heat, then complete the weld to a solid weld before working



the sides and completing the square up of your piece.

Ok, you have just completed one practice run doing this cold. If everything went as planned, practice it 9 more times so that the steps are automatic and you're very comfortable with your motions and speed of operation. If your piece fell to the shop floor, as mine did, don't count this as a 'good weld' but correct your mistakes and try again. Practice, practice - doing this cold lets you 'get it down cold'.

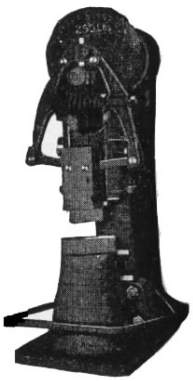
We are now ready to make a real weld. Lets talk a little about your fire. It should be a good deep fire with little or no clinker in the bottom of your fire. If it isn't this way, 'clean your fire' and rebuild it and get it to a level of a good deep fire before doing your weld. Use a good quality flux for your welding. Many smiths use plain borax "20 Mule Team Borax" but others prefer to use a flux like "Easy Weld". Gray uses Easy Weld for establishing the weld but goes with borax as the follow up flux if he goes back into the fire to reheat and completely close the weld. To flux your parts bring them up to a good orange heat and then sprinkle them with the flux. Then go into your fire and heat to a 'welding heat'.

I love that - What is a 'welding heat ? - if I knew what a 'welding heat' was I wouldn't be reading this article and trying to learn to do a forge weld. A welding heat is just short of the burning the steel - in fact a few sparks are OK. If you are using Easy Weld
- it will start to sparkle from the small pieces of metal in the flux. The flux will have melted, the metal surface will look wet and will tend to be sticky in your fire. I think in terms of the look of the surface that you get when gas welding because I learned to gas weld long before I learned to make a forge weld but this may not help you if you have never done gas welding. Gray has a good instruction for beginners trying to gauge a 'welding heat' He tells them that their metal should be 'the same color as the bottom of your fire' or as he says 'when your piece looks the color of the bottom of your fire, turn them over so that they are scarf side down for that last little heating of the contact surfaces of the welds."

We are now ready to do steps 5 through 10 for real and make a good weld. Good luck - you can do it.

Shop Tip

The other day I was wishing I had a 3/16" transfer punch and then remembered I had some old broken drill bits (do we ever throw anything away?). I found a broken 3/16' bit, ground off the twist drill portion and ground a point on one end. It made a dandy 1" long transfer punch.
Joe Babb, Knoxville
Appalachian Area Chapter July Aug 2001



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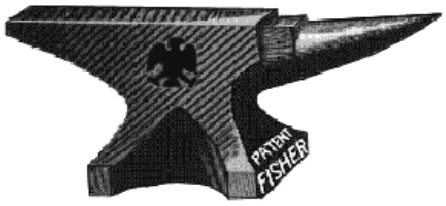

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