New Jersey Blacksmith Association

Newsletter

Volume 2, No. 3 Oct., 1997

www.NJBlacksmiths.org

October Membership Meeting

The next NJBA meeting will be held on **Sunday, October 19 at 10 am**, at the forge of **Grant Clark, 204 Millstone Road, Perrineville (Monmouth Co.), NJ** (Phone: 732-446-2638). Grant has been a professional blacksmith and farrier for the past 15 years. He will demonstrate the forging of tongs, and, if time permits, the forging of scrolls.

Bring lunch. NJBA will provide water and/or beverages. We will hold a raffle-style iron-in-the-hat, so please bring contributions to help raise funds for our treasury. We also encourage you to bring your excess or unwanted tools and books for the tailgate sale.

To get to Grant's forge: **From the north or southwest**, take the NJ Turnpike to exit 8 (Hightstown, Rt. 33). Take Rt. 33 east about 4.5 miles to Millstone Road and make a right turn.

From the east or southeast, take the Garden State Parkway to Exit 100A. Take Rt. 33 west through Freehold. After crossing Rt. 9, continue on Rt. 33 for about 8 miles to Millstone Road, and make a left turn.

Take Millstone Road about 3 miles to number 204, the first driveway past Pine Hill Road. If you come to Perrineville Road (= Sweetman's Lane) you've gone a little too far.

November Membership Meeting

The November meeting will be held on **Saturday, November 15 at 10 am, at Longstreet Farm**. Longstreet Farm is a living history museum representing the 1890's, located in Holmdell Park, Holmdell (Monmouth Co.), NJ. Grant Clark will be our host. Grant works one day a month at Longstreet Farm as blacksmith and farrier. Grant will give us a tour of the farm and demonstrate the making of horseshoes and oxshoes.

NJBA is interested in starting a blacksmith guild at Longstreet Farm. Some months ago, the volunteer coordinator at Longstreet agreed in principle if we could find a person to act as guildmaster. Grant has expressed an interest in doing so, so we may now pursue this objective again, if we have any members interested in the project. If this entices you, be sure to make it to this meeting.

Bring lunch and a beverage, or partake of the snack bar in the park. We will refrain from having an Iron-in-the-Hat raffle this month, since we will not be on our own turf. Members interested in a tailgate sale may do so from their vehicles in the (public) parking lot: Please don't count on being able to spread out your offerings.

To get to Holmdell Park, take the Garden State Parkway to exit 114. At the exit, go west about 3/4 mile on Red Hill Road to Cranford Corner - Everett Road, and make a right turn. On your left will be Bell Laboratories, recognizable from its water tower which looks like something out of H.G. Well's War of the Worlds. Either the first left (Roberts Rd.) or the second (Longstreet Rd.) after Bell Labs will take you to Holmdell Park. Find a parking spot and follow the signs to Longstreet Farm.

December Holiday Party (Pot-Luck)

Marshall Bienstock will host the December Holiday Party on **Sunday, December 21.** Never one to forsake the forge without a struggle, Marshall has chosen to make this a two-part affair. Those who want to come out for some **blacksmithing** or for a **tailgate sale** may join us at his shop, **663 Casino Dr., Howell (Monmouth Co.) at 10 am** (Ph: 732-780-0871). Marshall and others will demonstrate forging gifts and holiday ornaments, and we may solicit the attendees for good ideas.

The **party and potluck dinner** will be held at the home of Marshall and Jan, **301 Casino Dr., Howell, from 2 to 6(+?) p.m.** (Ph: 732-938-6577). Persons not interested in the morning events at the shop are welcome to join us there. **Spouses (or "significant others") are welcome** to attend either or both parts of this event. **Please bring a dish** of your choosing, enough for about six or eight modest servings (or twice that if there are two of you coming). If you bring a special-diet dish, such as vegetarian, please label it so others will know. (If your special diet prevents you from sharing, let us know. We won't be offended.) **BYOB.** We will provide soft drinks; if you wish something alcoholic, please bring it.

Casino Drive is just of Rt. 9, about 3.5 miles north of Interstate Rt. 195 (exit 28), and about 4 miles south of Rt. 33. On Rt. 9 northbound, make a right onto Casino Dr.; southbound, take the jug handle to make a left onto Casino. **Marshall's Farm** (morning events) is about a block east of Rt. 9. Marshall and Jan's home (party and potluck dinner) is about 3 miles further east on the same road.

Report on August Meeting

The August NJBA meeting was held be at John Graney Metal Design shop, in Garwood, NJ, an ornamental and architectural ironwork shop. John started by showing us the samples he has of past projects, giving us some insight into how a commercial shop works modern techniques, such as arc welding, into an object, while retaining the look of traditional blacksmithing. He then took us to the back office, where he showed the starting point of a project: The drawings. He discussed a project they are currently working on, and what steps they've taken to keep the time down. From there he showed us the project itself, including the various parts in progress. He discussed the use of different tools and

techniques, especially those needed to form the ornamental elements, such as leaves and finials. He showed us a chandelier which was hanging in his spray-painting room. He discussed some tricks of the trade in designing and assembling a lamp. John demonstrated some of the techniques at the forge, using various stakes, swages and forms. He demonstrated both of his power hammers, one a 25-lb. Little Giant, the other several times as large. Throughout the presentation, the attendees had a great deal of time to ask questions and to discuss details.

As promised, NJBA held its first official **tailgate sale** at this meeting. Three members brought tools and other items to sell or trade. Among the items for sale were leg vises, tongs, hammers and top tools, as well as horseshoes and even some woodworking tools.

Three members donated items to NJBA, and, in lieu of an iron-in-the-hat, Marshall Bienstock was roped in to auction them off. The treasury gained $83 in all.

Report on September Meeting

The September NJBA meeting was held at the forge of David Macauley, in Jackson. Bruce Freeman and Marshall Bienstock demonstrated their "Aussie burner"-powered propane forges (See "Gas Forges" elsewhere in this issue), complete with pyrometers to estimate temperatures achieved. These forges easily reached 2250°F, quite ample for forging, but not for welding. Some die-hard coal-burning blacksmiths in our midst were quite impressed by the speed these things would heat iron, with no chance of burning it. Grant Clark brought along his gas forge of a different design, which he uses for horseshoeing.

Using his forge, Marshall demonstrated spoon-making, while, using Bruce's forge, David demonstrated hinge-making. David finished this job -- the weld -- on his coal forge.

Some work was done on the wrench for LaTourette Mill, but only modest progress was made.

Two members brought along tools and books for the tailgate sale. No iron-in-the-hat was held this meeting.

Another Anvil Repair Workshop

As noted in the 1998 NJBA Meeting schedule, we have tentatively selected Sunday, April 19, 1998 as the date for another anvil repair workshop (providing we can identify an appropriate MIG wire to use). Marshall Bienstock will host the workshop at his forge in Howell (Monmouth Co.), NJ. Persons having their anvils repaired must participate in the work and pay a fee (probably about $50). Already we have folks eager to bring anvils to this workshop, so let us know if you want your name on the list.

1998 NJBA Meetings

Mark your calendar for the following meetings. If you would like to host a membership meeting at your forge, please contact the editor or any of the directors.

Saturday, January 17, 1998. Tentatively to be held at Allaire Village, in Wall (Monmouth Co.), NJ.

Sunday, February 22, 1998. We are investigating getting loan of the NOMA trunk show for this meeting. Location not yet determined.

Saturday, March 21, 1998. Tentatively, Don Harbert will host this meeting at his forge in Atco (Camden Co.), NJ.

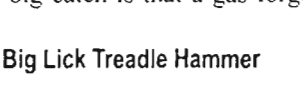
Sunday, April 19, 1998. Tentatively, Marshall Bienstock will host another anvil repair workshop at his forge in Howell (Monmouth Co.), NJ. (See separate announcement elsewhere.)

Saturday, May 23, 1998. Tentatively to be held at the New Sweden Farmstead Museum in Bridgeton (Cumberland Co.), NJ.

Gas Forges

by Bruce Freeman

Marshall Bienstock and I completed our gas forges and brought them to the September NJBA meeting. These forges consist of a section from a water tank, 12" dia. x 12" long, insulated with ceramic fiber, and with a castable refractory bottom. They have a removable back door that is also insulated with ceramic fiber. The front must be closed with a stack of firebricks. The burner port comes in at the upper side, tangentially, and an "Aussie burner" slips in this port. This burner uses propane and ambient air: No blower. This design makes the forge very portable. I understand that the forge is also quite economical of gas, burning 8 hr. on a 20# tank (back-yard barbecue size). We can't confirm that yet from our own experience.



The Big Lick Treadle Hammer

One big catch is that a gas forge has no flue. Both days that Marshall fired his up in his shop -- with that large sliding door wide open, only a few feet away -- I developed nasty headaches. I believe they were due to carbon monoxide poisoning. Hence, ***extremely*** good ventilation should be employed when using one of these forges. I plan to install a fan through the roof of my garage to provide adequate ventilation when I'm using this forge.

We are discussing the possibility of holding a gas forge-making workshop. Although Marshall made his own burner, it would not be appropriate for NJBA to sponsor a workshop to make those, as the design is owned. Derry Cook, who supplied me my burner, has agreed to make the burners available to us in quantities of five or more for $50 each, plus shipping. This is a good deal. If anyone is interested in making a gas forge, contact one of the directors to encourage us to schedule a workshop. - Bruce Freeman

Blacksmithing Classes

Below is the schedule of the remaining 1977 blacksmith classes at the Carroll County Farm Museum. Presented by the Blacksmith Guild of Central Maryland, Inc. For full details, see Newsletter Vol. 2, No. 1. All classes are scheduled from **8 am to 4 p.m. on Saturday and Sunday**. The **cost** for a two-day weekend class is **$80**. To enroll in a class call the Farm Museum at (410) 848-7775 or toll free 1-800-654-4645.

Oct 25 & 26 (Level 1) ***Beginners Class*** (See class description above, Aug. 9 & 10.) **Instructor**: Albin Drzewianowski

Nov. 8 & 9 (Level 2) ***Making Christmas Items*** The student will learn to make seasonal items such as mantel hooks, candy canes, candle holders, and Christmas tree ornaments. **Instructor**: to be determined

Nov. 22 & 23 (Level 2) ***Making Garden Equipment*** The student will learn to make plant holders, beverage holders, hose hangers and other items useful in the yard or garden. **Instructor**: To Be Determined.

NJBA Directors

Marshall Bienstock (director until June 1999)
663 Casino Dr., Howell, NJ 07731
H: 908-780-0871

Grant Clark (director until June 1999)
P.O. Box 158 (Millstone Rd), Perrineville, NJ 08535
H: 908-446-2638

Pete Engle (director until June 1998)
47 Center St., Rumson, NJ 07760
H: 908-219-6560; pgengle@aol.com

Bruce Freeman (director until June 1998)
222 Laurel Place, Neptune, NJ 07753
H: 908-922-8408; W: 609-716-2827
freeman@monmouth.com, freemanb@pt.cyanamid.com

Bill Gerhauser (director until June 1998)
415 Hutchinson St., Hamilton, NJ 08610
H: 609-394-1817 FAX: 609-394-7283

Bill Ker (director until June 1999)
Box 14, Allenwood, NJ 08720
H: 908-223-4188

David Macauley (director until June 1998)
4 Patricia Ct., Howell, NJ 07731
H: 908-206-1568; W: 908-949-8422
drm@anchor.ho.att.com

Andy Vida-Szucs (director until June 1999)
13 Old Monmouth Rd., Freehold, NJ 07728
H: 908-308-9039; osan@netlabs.net

Events Outside NJ

Saturday & Sunday, October, 11th & 12th, 1997

The Blacksmith Guild of Central Maryland and the Carroll County Farm Museum present the 9th Annual Blacksmith Days. Activities start at 9 am each day on the grounds of the Carroll County Farm Museum, 500 S. Center St., Westminster, MD

The featured demonstrator will be Clay Smith, Gunsmith from Colonial Williamsburg. He will demonstrate forging a pistol gun barrel, forging gun lock parts and forging and tempering a tomahawk. There will be an auction at 4 pm on Saturday and an Iron-in-the-Hat on Sunday. Those attending are encouraged to donate items for both the auction and the Iron-in-the-Hat. A site will be available for tailgating. Admission is $5.00 per day or $8.00 for both days. (Regular Farm Museum admission after 12 noon.) For further information call The Carroll County Farm Museum at (410)848-7775 or Bob Morris, BGCM, (301) 253-2084 E-mail: albind@ccpl.carr.lib.md.us

Book Review (Much Abridged):

Pounding out the Profits -- A Century of American Invention, **by Douglas Freund.**

(Hardbound, 317 pp. $32.50 + $4.50 shipping and handling. © 1997, Mingus Mountain Machine Works, P.O. Box 532, Jerome AZ.

"Freund did his best to include every aspect of crank actuated power hammers, including a wealth of illustrations in the form of photographs, magazine ads and patent drawings. In fact, there are over 250 illustrations; nearly every spread in the book is illustrated.

"There are countless pieces of invaluable power hammer history written here, all fully footnoted so that we can easily find the source for further study. This is not a 'how-to' book like the Little Giant book written by Kern. Rather, this is an attempt to preserve a valuable piece of blacksmithing culture before that information is gone.

"Nothing else exists on the topic. Freund deserves a monument for his 'no-stone-unturned' approach to the subject." (Reviewed by Jim McCarty, editor, the Anvil's Ring. Reprinted from *The Anvil's Ring*, with permission .)

Your Editor Wants Your Article!

Write about, what caught your interest in blacksmithing in the first place.
Write about questions that you have.
Write about what you would like to accomplish.
Write about any classes that you have attended.
Write about any blacksmithing books that you have read.
Write about the projects that you are working on.

See, that would be 6 issues worth of stories for your local chapters newsletter and I'll bet that your editor would give you a gold star Dave Mudge / Magic Hammer

A Smokeless Forge by Dan Cruzan

Awhile ago I decided to build a new forge. Having had one and having seen several other forges that were really good at filling the shop with smoke I decided to do some research on chimneys, smokestacks, fireplaces and any thing else that was involved with getting smoke out of a building. The best information came from design criteria for industrial smokestacks. All of my research boiled down to basically this: if there is enough fresh air entering the building to support combustion and if the chimney is of sufficient size to carry away the products of combustion, the building will not be filled with smoke. It's as simple as that.

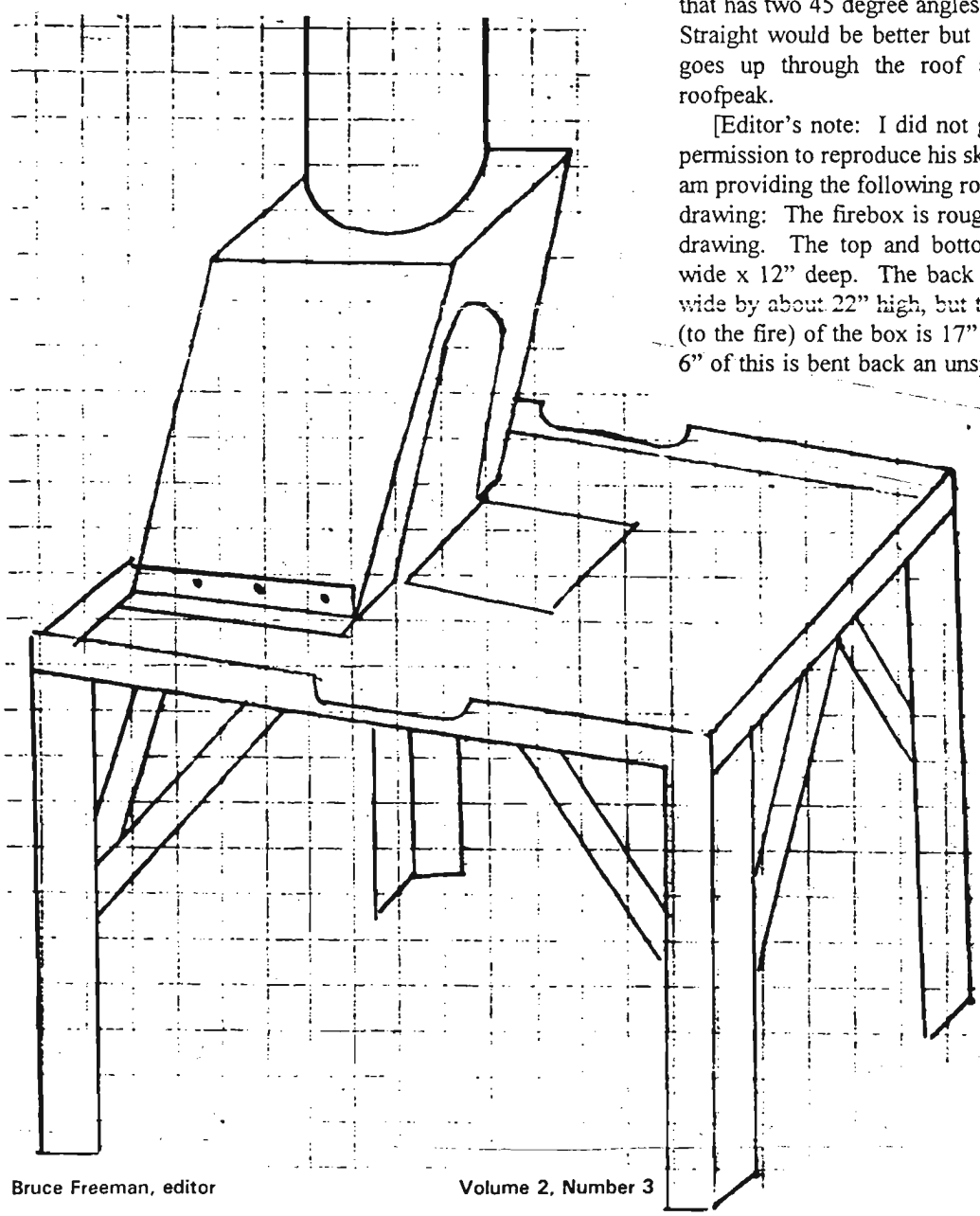
Armed with this golden but little-believed bit of information I made my new forge. It is a side draft style with the firepot directly in front of the smoke chamber. Located here you can see the fire because it is completely in the open. The forge does not smoke unless there is a breeze blowing toward it from the 10' x 12' open door that sits about 6' from it. There is no smoke shelf in the smoke chamber, there doesn't need

to be because no air is coming down the chimney.

My forge is simply a table made of 1/4" plate with angle iron legs and an angle iron rim around the edge. It is appropriately reinforced to prevent racking and to keep the top flat. Approximately 2/5 of the way from the back a rectangular hole was cut in the top to accept a firepot. (Laural Machine and Foundry Co. Laural Miss. 601- 428-0541 makes a good heavy one for about $80.) Directly behind the firepot is the smoke chamber. I think a combustion chamber would be a better name because a great deal of the combustible gases given off by the coal is burned here. This chamber helps everything to work right providing its inlet and outlet are properly sized. Its sort of a rectangular box that is leaned slightly toward the firepot. The smoke chamber came from a drawing from Frank Turley. My chimney is a 10" stovepipe that has two 45 degree angles to move the pipe over about 3'. Straight would be better but I had no choice. The stovepipe goes up through the roof and ends about 2' above the roofpeak.

[Editor's note: I did not get through to Frank Turley for permission to reproduce his sketch of the firebox. Therefore I am providing the following rough dimensions of it in lieu of a drawing: The firebox is roughly as Dan has indicated in his drawing. The top and bottom of the firebox measure 17" wide x 12" deep. The back is rectangular (presumably 17" wide by about 22" high, but this is not specified). The front (to the fire) of the box is 17" wide by 23 high, but the upper 6" of this is bent back an unspecified amount (maybe 2"). It should be clear that the sides are not parallelograms (as Dan has illustrated), but irregularly pentagonal. The widest point of the sides (corresponding to the bend in the front panel) is 14". The opening in the front side is defined by a circle of 5.5" radius, 16" above the bottom at its highes point, which connects by tangents to the 13" base. There is a visor, measuring 4" x 20", which arches over the front opening. Apparently this firebox has no actual bottom side. Instead a nagle iron strut (maybe 1/2" angle iron) is used at the base of the front opening for reinforcement.]

[For an alternative design for a side-draft firebox, see the NJBA June Newsletter. - Ed.]



The Scrap Corner

Of long tradition, blacksmith shops have had a scrap corner or pile. There reposed unused bits and pieces, broken and discarded tools and implements. This pile was not regarded as waste, but rather as a valuable resource for a small piece of material, useful odd shape, or a piece of desired special material. In olden times and remote areas, when iron stock material was at a premium, scrap would be forge-welded together into a billet, then fashioned into a desired product.

I have a friend who, as a master farrier, conducted a farrier school for a number of years. As an exercise in confidence building, he required his students to forge-weld two old, very worn shoes together and produce from this a new shoe, much as was not an uncommon necessity in earlier times.

I propose to toss something into the scrap corner as often as I can, and I invite others to do so too: any hint or idea that may be of use to someone, a technique, hint, shopping hint, product or tool, testimony (positive or negative), a novel tool idea, finishes and coatings, quenching and tempering solutions, patina formulas, etc.

This will be my first scrap tossed into the corner for those who are equipping their first shop.

The Layout Table

A very useful (necessary) piece of furniture is a fitting and layout table. The work contemplated will dictate its size. Mine is 3 by 4 feet, of half-inch steel plate, with the corners radiused for safety. At 33 inches high (the same as my chop saw) it is advantageous when handling long material.

There is a four-inch flange all around, to facilitate "C" clamps. Temporary dogs and stops can be welded to the table for accomplishing large-radius bends or shapes and for use as fitting and holding jigs. The table is heavy enough to withstand moderate hammering, and as an accessory I use a 12" x 12" x 1" plate for heavier hammer work on the table. I cut a hardy hole in one corner. This can receive various bending forks and jigs for truing up shapes during fitting, it's also a handy place for a filing vise.

If your shop has a concrete floor, mount your table on heavy casters to make it convenient to move when advantageous. I place horse shoes around the casters which makes it very stable to heave against when necessary.

- Tim Suter

Erratum

Your editor blew it when labeling the last newsletter. As a result there may be some confusion between the last two newsletters, June and August. The real June, 1997, newsletter, Volume 2, No. 1, is properly labeled, and may be told at a glance by the circular "Membership dues are due NOW!"

However, the August issue, was also labeled "June," and "Volume 2, No. 1." The volume and number *are* properly indicated at the bottom of all pages. The second article in this issue is titled "August Membership Meeting...", and the issue may be told at a glance by the tapering "If you haven't paid your '97-'98 dues...."

Sorry for the confusion. - Ed.

Make your own Charcloth

Some of you who do re-enacting or make strikers know well, but I will explain for those of you who don't know about the magic ingredient necessary (or nearly so) for starting a fire with flint and steel. [To make it] I use a old paint can that is *very, very, very* clean. (Perhaps not the best idea as there may be residue that could cause it to explode and I would use something different if I were to do it again, but it works damn well.) What you need to do is cut up a number of pieces of a natural fiber material. I use old strips of linen as I have a lot on hand from making my re-enacting clothes. Cotton will work as well. [Wool, silk and synthetics should not be substituted. - Ed.] Place these pieces in the can, say about an inch by an inch or an inch by two. Then close the lid on the can. You must punch a small hole in the bottom of the can and one in the top. Like the charcoal pile, this lets the gasses escape. Set the can in a fire and watch the hole. Smoke should start pouring out. After the smoke has stopped, carefully retrieve the can and set it aside to cool. If you open it now there is a chance that the cloth will burst in to flames and burn, not what you want. When you open the can, the cloth should be very fragile and solid black. It is simply charcoal made out of cloth.

To use the charcloth, place it on top of your piece of flint as when you strike the sparks come up off the striker. I have found that it is best to have the charcloth hanging just over the edge and I also fold it over with the fold on the edge. Just seems to help me. With a little practice (and demonstrating this for people a few times a day will do that for you) you can get a spark on the charcloth very quickly, say three or so strikes. You may not see the spark catch at first, but if you think there is one, blow on it and you will see a small spark slowly spread across the cloth. Place this on your tinder (raw flax works wonderfully) and you've got a fire.

Now you can make striker and demonstrate them as well. If you make up a complete fire starting kit you can add in the charcloth and a little tinder and jack up the price a bit. One of the big re-enactment supply stores sells a complete fire starting kit to include the striker, flints (2), charcloth, tow for tinder, a leather pouch, and an instruction book for just under thirteen dollars. Not a bad haul for a little work on a scrap piece of steel, two rocks you can pick up on the average riverbed and scrap linen. I wouldn't add the tinder as they can use dry grass or get their own, and demonstrations always work instead of an instruction book. I do know that most re-enactors carry their fire starting kit in a tin box, this supplier sells them for a dollar a piece, does this sound profitable to anyone? Robert H. Neidlinger

Super Quench

developed by Robb Gunter

- 5 lbs Salt.
- 28 to 32 oz. blue Dawn dish detergent.
- 8 oz. Shaklee Basic I (surfactant)
- 5 gallons of water.

Stir very well before each use. When Blue Dawn Detergent turns green, throw away and start over.

Testimonials: David Mudge <lama@wild.net> "... 'Superquench' is used for hardening mild steel. Yes, that's right. mild steel. as a matter of fact, one shouldn't quench anything but mild steel in 'Superquench'." Steve Smith said, "... Gives 40-43 Rockwell C hardness out of 'mild' steel, all the way through the piece. Axle steel (1040) may be quenched and used as cutting tools without annealing. Much more carbon than 1040 and your piece will just break when you quench it." Steve R <Doveknives@aol.com> said, "...extremely fast and is handy for hardening lower carbon steels successfully as well as some higher straight carbon steels {not high alloy}."

Making Your Own (Tiny) Drill Bits

Some years ago I used to teach jewelry making. (Patience please. there really is some blacksmithing coming up here.) Jewelers do a lot of pierced work. That is, drill a little hole, thread the jeweler's saw blade through, saw an interior shape, remove the blade and repeat until the piece is sawn to shape. A jeweler's saw is tiny. Shapes are small. This means a small drill (say a #60 or so). 20 years ago, a #60 drill cost about 80 cents. buying one at a time.

Students tend to break *lots* of these bits. For a while, I simply told them to supply their own, figuring that they'd be more careful. Finally I realized that most of them were simply learning fine motor control in their hands and fingers, and were physically incapable of the control necessary to work at that scale. I added a demonstration to my teaching curriculum -- making tiny drills. Here's about how it goes:

Required components:

- Sewing needle
- Alcohol lamp
- 3-in-one oil
- Pliers
- File Jeweler's bench block (polished steel)
- Jeweler's hammer (chasing hammer OK, I prefer riveting hammer)

Procedure:

1. Light the alcohol lamp. Have the bench block next to the lamp.

2. Holding the needle by the eye in the pliers, heat the tip to red hot in the flame of the lamp.

3. Forge it flat on the bench block. (if you can't do this in one heat, you're moving too slow between heating and hammering.)

4. Let the needle air cool.

5. File the flattened tip of needle to the diameter of the hole and shape the tip to a spade bit shape. Angle of filing creates the relief for the cutting edges.

6. Prepare a quenching container (I often used a soft drink bottle cap) and put some 3-in-one oil in it.

7. Heat the point to red hot and quench in oil before it loses color.

8. Come right out of the oil and hold it in the alcohol lamp flame just long enough to ignite the oil. Pull it back and let the oil burn itself out. This draws the temper to just about the right point.

This little demo was really an eye opener to a lot of students. The look on their faces when they could see two little curls of metal coming off the point of their drill was amazing.

Morgan Hall, Wilsonville, Oregon

Employment Opportunities:

Metalsmith with Management Skills
Consulting Metalsmiths

Decorative arts company seeks **blacksmith / sheet metal worker with management experience** for a project to design and set-up a production shop on-site in the Caribbean. Proficiency in the French language would be a plus, but not absolutely necessary. It is anticipated that the project will take approximately one year, with the possibility of on-going involvement after completion of the initial phase. Exceptional opportunity for adventure, excellent compensation, and accomplishment, working with a positive, well-established company while directing skilled and semi-skilled craftsmen in improving their working environment and techniques.

Responsibilities will include upgrading and improving current production processes by: Selection and purchase of new equipment, tools and supplies ; Participation in design of our new production facility ; Creation of production procedures ; Training of skilled and semi-skilled craftsmen ; Product development and creation of prototypes

Compensation: Liberal salary and benefits; All living expenses in-country paid by employer; Frequent trips home w/ travel paid by employer.

This job will demand the best you have to give in terms of knowledge and expertise and will require frequent exchange of information and ideas with the highest level of the company.

We are also looking for **qualified metalsmiths to consult** in the areas of jig-making, product development, and procedures.

Applicant should send resume and salary requirements to the following e-mail address: blivet@mindspring.com

Thanks, Geoff Baker

[Note: If anyone wishes to apply and lacks email to do so, please contact your editor. - Ed.]

TOOL HEAD GEOMETRY AND REHANDLING

Are your tool heads mushroomed and cracked, handles split or badly damaged? Here is what you need to know to make them safe again. The brief time spent correcting the problem will provide hours of safe and more satisfactory use. See figure 1.

For most general use tools a slightly convex head edged by a smooth rolloff to the side and a slightly pyramid or conical shaped supporting body will provide the best combination for long service. See figure 2. The actual face will be very near a circle no mater what shape the body. See figure 3. There is a reason that square body tools have the edges cut off. It makes it much easier to form the circular top. The sharp square edges are likely to chip or snap off if they remain. See figure 4. Note: the working (not struck) faces of a number of tools like set hammers have resaonably square corners and sharp edges.

It is not practically possible to hit flat on a flat surface which would only flare out the material - the start of mushrooming. See figure 5. The slightly convex head shape permits a square surface blow in a large variety of striking positions. It also permits tilting the tool to correct for flaws as work progresses. See figure 6.

If your handle is damaged obtain a new one at least as large as the eye in your tool head. It works best to take the head with you with the eye clear since sizes vary greatly. Use a draw knife, fine wood rasp, scraper, etc to get the handle to fit. Remember the large end of the eye gets the wedges. Strike the back end of the handle to force the head on firmly. Mark the handle and remove the head to see that you have enough depth of slot for the wood wedge. Resaw if needed. Replace head, saw off excess handle, drive in wood wedge and saw off excess and across it drive in the steel wedge. Figure 7 shows how to shape a simple steel wedge. The steps help keep the wedge in place.

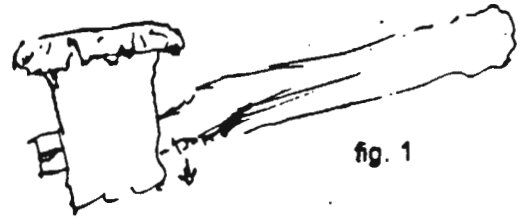


fig. 1

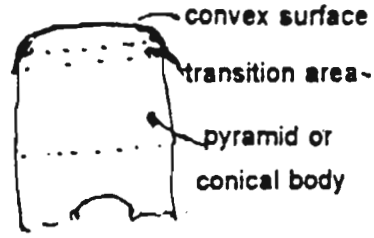


fig.2

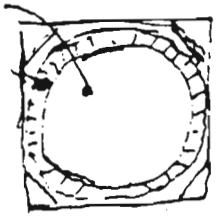


fig.3

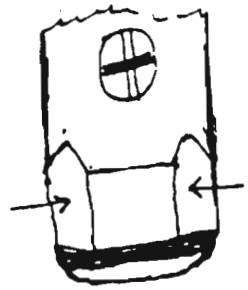


fig. 4

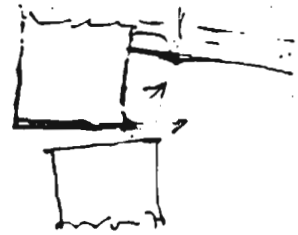


fig. 5

fig. 6

fig. 7 wedge

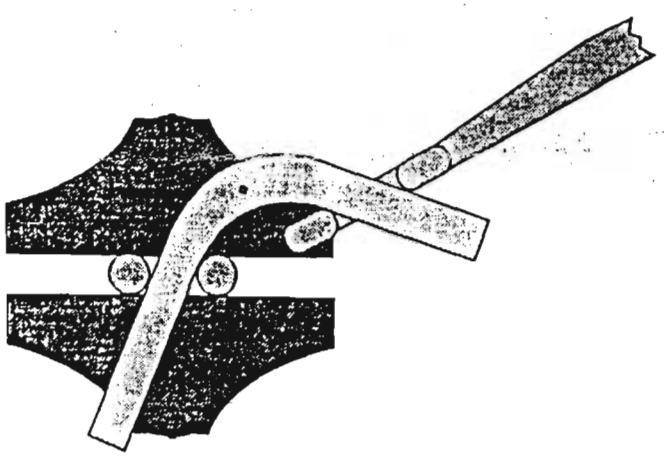
INDIANA FORGE FIRE DECEMBER 1996

Upset Square Corner

Allan Kress was in my 1995 Advanced Class at the Folk School. This is written for his AFC scholarship.

Center punch where you want the center of the bend and in the center of the stock. Make it big enough to see easily. Don't worry, it will be closed up when you are through.

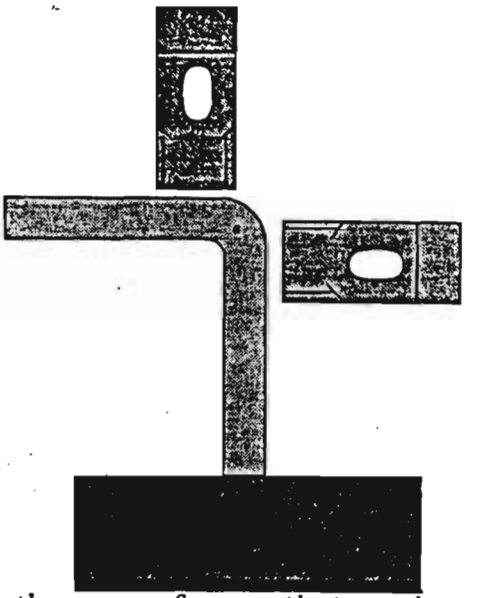
Heat at the CP mark and bend with bending "U" in vise and bending wrench. Center the mark between the "U" and bending wrench. Bend the piece to a little less than 90° with bend centered exactly on punch mark.



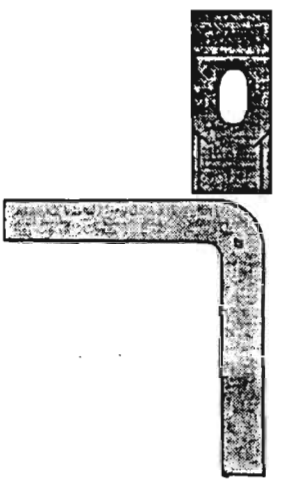
When doing any kind of upsetting, always work metal as hot as possible without burning. It is easier on the metal and your arm. Use light hammer for this upsetting. Keep heat local to where bend is so a long section won't be upset. Cool with water if heated section is too long.

Hit just behind corner but not right on the corner.

Hit with an equal amount of force on each leg. Vertical blows are more forceful or effective than horizontal blows. You should count blows and hit more horizontal blows than vertical blows.

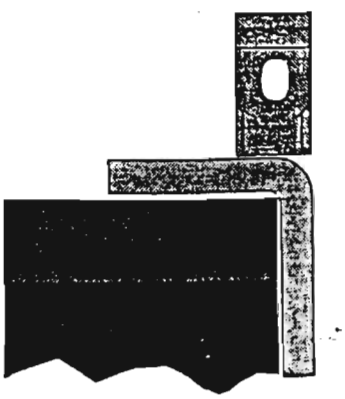


Check the corner frequently to make sure the center punch is in center of the corner. If it is further away from one side, hit on that edge of the corner with more or heavier blows until the mark is centered.



Center punch is not centered. Hit more blows on this edge. Hammering here will move the corner so the punch mark is centered.

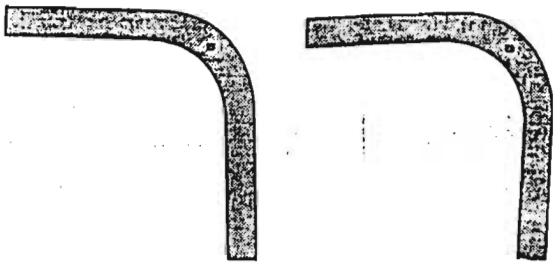
Do not put the inside corner on a sharp edge of the anvil. You will make a mark and a crack in the corner.



Bituminous Bits Journal of the Alabama Forge Council

Upset Square Corner, Concluded

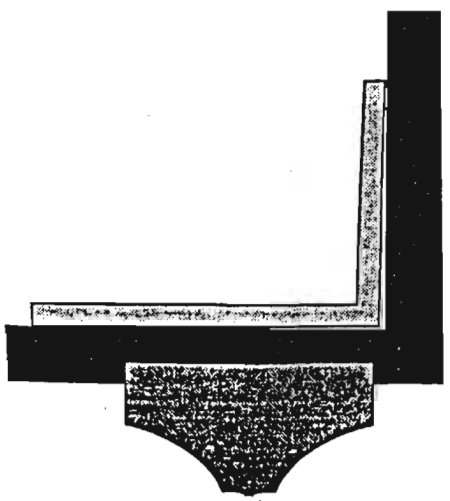
Don't hammer the angle sharper than 90° and have to open it up. This too can make a crack inside the corner.



Keep open like this. Bend is too tight.

Keep the width down to the original stock thickness. Move the thickness resulting from the upsetting out toward the corner with wiping blows. Work both sides at same heat to keep everything even.
Keep upsetting until the outside corner is sharp, not rounded. The inside corner should have a small radius but not be sharp or cracked.

Check the outside of the corner for square on the inside of carpenter's square. Check each leg to be sure they are straight and not bent or twisted. Check the back and sides of each leg. If the corner stock is thicker than the legs, then you will be able to see daylight between the leg and square on one side or the other.



As an example cut a 12" length of 1/2" square stock. Put center punch exactly in the center of the width, 6" from each end.

After you have made the square corner, the center punch mark will be closed up, but should be exactly at the center of the corner. The lengths of each leg on the outside from the end to the corner should be 6 1/4" and the inside lengths from the corner to the ends should be 5 3/4". From the center of the corner center punch to each end should be 6". The center length stays the same, the outside increases in length and the inside decreases in length.

If you are making multiple square corners on one piece, get the first one square in all three planes before going to next corner. It should lay flat on the table on either side.

Another exercise to see how good you are is to make a four upset corner welded square. Cut a 4' length of 1/2" square stock. Lay out marks at 6", 18", 30" and 42". Upset the ends for forge welding but don't make the scarfs until the corners are forged square.

Check each corner for square in all three planes and make corrections as you go. It will save you a lot of work to fix each corner as you finish them.

After the corners are all made and check out square in all three planes, forge the scarfs. Make a convenience bend or twist in the opposite leg, if necessary, so you can forge the scarfs. After making the scarfs, straighten out the convenience bend/twist.

Forge weld and draw weld area back to exactly 1/2" square.

You should be able to lay it flat on a table and all four corners touch when laying on either side. If your punch marks are centered in the corner, each side should measure 12 1/4" on the outside, 11 3/4" on the inside, 12" between each center punch.

By Allan Kress

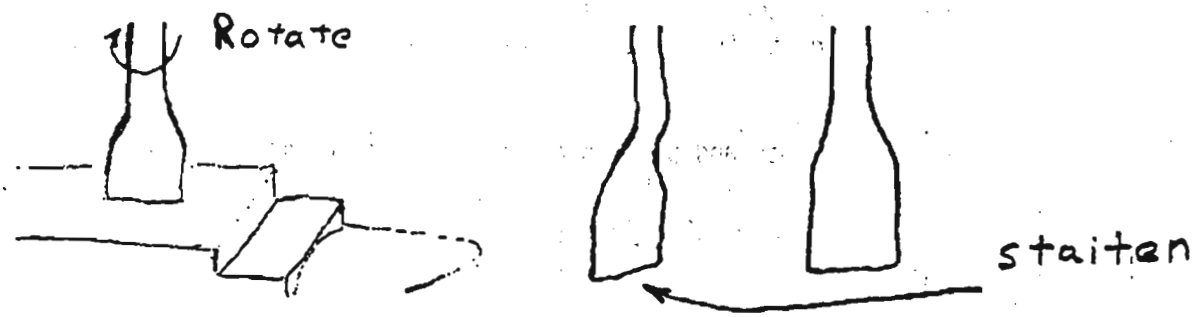
Bituminous Bits, Journal of the Alabama Forge Council

Upsetting a Ball on the End of a Bar

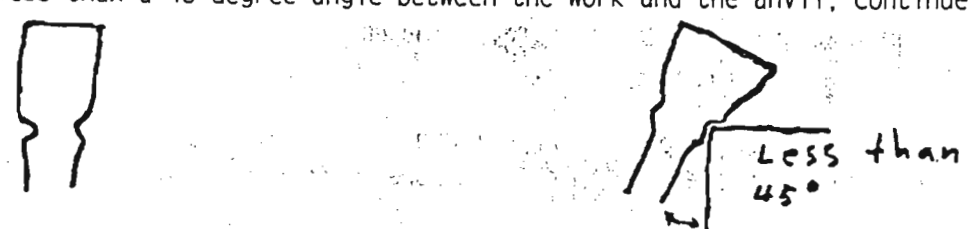
by Hyrum Hunter

Now we will move on to upsetting. This is of shortening and thickening of a bar. An old term for this is jumping up. You can use this process on the end of a bar to form a ball or to gain more mass for spreading or punching or whatever the project calls for. You can also upset in the center of the bar for some of the same reasons.

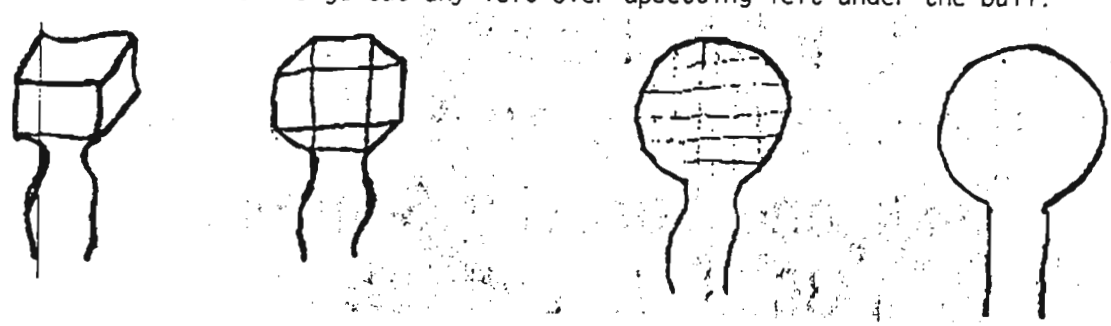
In the class, we were practicing upsetting by putting a 1" ball on a 1/2" square bar. This takes 2 1/2" of material. Measure the length of the bar and upset one end until you are 2 1/2" shorter. Do this by slamming the end of the bar on the top of the anvil rotating the piece as you strike. This helps keep the bar straight while upsetting. The straighten up the end of the piece before returning to the forge.



Now fuller a 1/2" neck near the end of the upset portion of the stock. This neck is very important as you use it to help form the top side of the ball. Holding the neck against the edge of the anvil at less than a 45 degree angle between the work and the anvil, continue upsetting.



Always move the material in two planes and at 180 degrees of each other until you have accomplished a cube. Then work the piece to an octagon on all 12 sides and from octagon to a 16-agon and then to round. Now forge out any left over upsetting left under the ball.



from the Newsletter of the Bonneville Forge Council, May, 1997

1998 ABANA Conference, June 17-20, Asheville, North Carolina

The Program:

The 1998 ABANA Conference will be held June 17-20, 1998 on the campus of the University of North Carolina, Asheville, North Carolina. The theme of the Conference, "By Hand-By Hammer", is intended to be an affirmation of the hand-forging process as demonstrated by some of the finest Contemporary and Traditional artist-blacksmiths currently working. In addition to a wide range of hand-forged presentations, there will be two well equipped power hammer stations as well as hydraulic forging press operations. In all, plans for 10 forging stations plus a 10 forge teaching station have been finalized.

The educational venue of this event includes slide presentations and round-table discussions along with hands-on workshops in drawing, design and CADD. Several special projects will take concepts from layout through completion in a series of sites dedicated to their use.

Little Giant Power Hammer Site: One of two power hammer sites, the Little Giant site will include a scheduled rebuilding of a 25lb hammer and a series of demonstrations on the use of the 25lb Little Giant with flat dies, drawing dies and set-tools. A rebuilt 25lb Little Giant will be part of the Iron in the Hat. Your dollar-ticket could be the one that wins it!

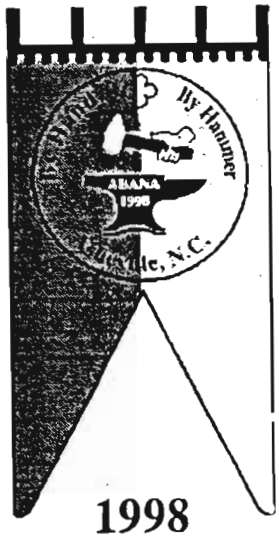
ABANA Conference Auction, "Auction On The Green"

The 1998 ABANA Conference is just under a year away, so it's time to start thinking about contributing a piece to the ABANA Auction. While we all should realize how important the fund raising function of the ABANA Auction is to our organization, we also realize how tough it can be to find the time to do a piece for donation. This is even more the case if you want to do a fine piece for both the Gallery and the Auction. At the 1998 ABANA Conference you get the chance to do both with a single piece, if you so desire.

As with every Conference, the 1998 Conference will have Galleries for work shipped in by a specific date and for work carried in on the day the Conference starts. In this event it will be possible to designate your Gallery submission for sale at the Auction. A "one piece does all" approach that allows any member to participate in both Gallery and Auction events with a single piece of work. Gallery pieces designated for the Auction on Friday night will stay on display until the Gallery closes late Friday afternoon. Of course, you can contribute to just one, both or neither, but without your efforts the Gallery and the Auction will be less than they could be for all of us.

Remember that the value of your donation to ABANA, a 501(c)(3) Corporation, is tax deductible to the extent allowed by law. Documentation of your donation will be supplied by ABANA.

An Auction Brochure is being printed and will be sent to Gallery locations across the southeast to invite patrons of the arts to this event. Some work will be designated for the Silent Auction and some will be designated for the Standard Auction. Any ABANA member who donates a piece to the ABANA 1998 Conference Auction will have a color strip affixed to their name tag when they deliver their piece. This shows they are an Auction Donor. This prominent color strip will entitle them to represent themselves to auction patrons in the Auction section of the Gallery during the Auction Gallery Reception. This will precede the Auction on Friday evening. So donate a piece and bring your Portfolio. Thank you for the effort you will make for ABANA.



1998 Conference Highlights

How to Join or Re-Join NJBA...

NJBA dues are $15 per year. Please make out your check to William Gerhauser (NJBA Treasurer). Note on the "memo" line that the check is for NJBA dues. **Please mail checks to Bruce Freeman, 222 Laurel Place, Neptune, NJ 07753.** You will receive the most recent newsletter as an acknowledgement of your membership. Annual dues are due on June 1. (Persons joining after April 1 are members for the year beginning the following June 1.)

(This information will be listed in a roster available to other members, unless you request otherwise.)

Name_____ Home Phone_____

Address, City, State, Zip_____

Electronic Mail Address_____

New Jersey Blacksmith Association

Newsletter

222 Laurel Place
Neptune, NJ 07753