New Jersey Blacksmith Association

Newsletter

Volume 2, No. 4 Jan., 1998

www.NJBlacksmiths.org

January Membership Meeting

The January membership meeting will held on Saturday, January 17, at the forge of Bruce Freeman. If a snow or ice storm should make driving unsafe, the meeting will be canceled -- call first if there's any question.

The meeting will be a very informal, open-forge meeting, and will begin a little later than usual: 11 am. Since this is a suburban forge, we will be burning propane only, unless the wind conditions are favorable for carrying away coal smoke, without bothering the neighbors. There will be a tailgate sale, but no iron-in-the-hat.

Take the Garden State Parkway to exit 100, where you pick up NJ Rte. 33 east. Take Rte. 33 for 2.5 miles, and make a left turn at the traffic light onto Fortunato Place. At the yield sign, go straight ahead onto Laurel Place. Laurel curves to the left, and half a block later, on your left, is Bruce's home, 222 Laurel Place, Neptune, NJ (732-922-8408).

NJBA '98-'99 dues are due in June. Renewals are gladly accepted in advance.

February Membership Meeting

The February membership meeting will be held on Sunday, February 22, 1998, at the forge of Dan Cruzan near Bridgeton, NJ. Dan and Marshall Bienstock will be demonstrating, and, as of this publication, there are two remaining openings for one-hour demonstrations. (If you'd like give a demonstration, contact Dan by Feb. 1.) The schedule for the meeting is as follows:

- 9:30 a.m. - arrival, coffee, socializing
- 10:00 a.m. - demonstration of basic techniques.
- 11:00 a.m. - project demonstration
- 12:00 p.m. - lunch, socializing, tailgate sales, iron in the hat
- 1:30 p.m. - demonstration.
- 2:30 p.m. - advanced demonstration.

Bring lunch and a lawn chair. Please bring a project you have made that to inspire us all.

Dan's Forge is near Bridgeton (Cumberland Co. NJ). Southbound on NJ turnpike get off at exit 2. Take rt. 322 east to Mullica Hill. Take Rte. 77 south about six miles to Deerfield, which is at the intersection of Rts. 77 and 540. From Deerfield, proceed west on route 540. Go past the 20 mile marker and at the next intersection turn left onto Harmony Rd. Go to the stop sign turn left onto Walters Rd. Go 200 yards turn right onto Harmony Rd. Dan's is the first farm on the right. There is a sign that says Dan Cruzan's Nursery (146 Harmony Rd., Bridgeton, NJ, 08302, 609-451-0904)..

If coming into NJ across Delaware Memorial Bridge take Rte. 49 east, (pick up 49 at the foot of the bridge). Go past the 19 mile marker on Rte. 49, turn left onto Jericho road. At the next stop sign go straight across onto Moore's Corner road. At the next stop sign turn left onto Harmony road. We're the first farm on the left.

Report on the October Meeting

The October meeting was held at the forge of Grant Clark, in Perrineville, NJ. The meeting got off to a slow start, with only about four people present, but along about noon, more folks started arriving. Grant demonstrated the forging of scrolls. Others took turns at the forge as well.

Report on the November Meeting

The November meeting was held at Longstreet Farm is a living history museum in Holmdell Park. Grant Clark, who works one day a month at Longstreet Farm as blacksmith and farrier, was our host. Grant demonstrated the making of horseshoes, and made it look easy, including the welds. During the demonstration, a few families with young children stopped in, and those of us experienced with doing blacksmithing demonstrations for the public were amused when the parents blithely told their kids, "See, he's making a horseshoe." For once, they were right!

The day was bitterly cold, with a stiff breeze. A few visitors to the farm stopped into the smithy to get out of the wind, and one or two even huddled up to the forge for warmth! By the time Grant had finished making a pair of horseshoes, as well as a punch for the nail holes, most of us were ready to give in to the weather and call it a day, so we skipped the ox shoe demonstration, and forewent the offered tour of the farm.

As mentioned earlier, NJBA is interested in starting a blacksmith guild at Longstreet Farm. During the day, we discussed this matter a bit, and it appears quite viable. Grant is willing to act as guildmaster. If we have any members with experience at the forge who are interested in volunteering at Longstreet Farm, they should contact Grant or one of the other directors.

Report on the December Meeting, Board Meeting, and Holiday Party

Marshall Bienstock hosted the December Holiday Party on **Sunday, December 21.** An open forge meeting was held in the morning at Marshall's forge, and Dan Cruzan demonstrated the fire he gets with Pocahontas coal.

A board meeting was held. **Tim Suter was elected to the board.** (Wecome aboard, Tim!) It was decided that **the February board meeting will be held on a weekend**, to encourge attendence by directors who have trouble attending

a Friday evening meeting. Bruce Freeman proposed **amending the bylaws** to streamline them, **a vote to be taken at the February board meeting**. The changes would drop outdated passages referring to formation of the chapter, simplify money-handling procedures, and require minutes only at board and business meetings. Bruce will draft the changes and mail them to all directors. (Interested members may contact Bruce for information.)

Afterwards, everyone traveled down the road to Marshall and Jan's house, where the party and pot luck dinner was held. The conversation was lively, despite only moderate alcohol intake by the party-goers. Several of us got our first look at Marshall's library of blacksmithing books.

Monday-Night Open Forge and the La Tourette Project

[Recently your editor sat down and really read the journal of the Alabama Forge Council ("Bituminous Bits," edited by Clay Spencer, who lives in NC. You figure it out.) It turns out that's not just an arbitrary name for the group. They are actually an organization of organizations, meeting at various places around the state. Neat idea. I'm wondering if NJBA should consider emulating it. Marshall Bienstock is already having weekly get-togethers Monday evenings. The same sort of thing could be encouraged elsewhere. NJBA would ask for a report on activities. David Macauley has provided a report on the goings-on at Marshall's forge. - ed.]

Initially we started working most weekly to finish the mill parts. We have just about finished the wrench - it needs some final filing inside the square and the ends need to be bent up, but the forging is complete. We have done quite a bit of practicing of forge welding the eye holes at one end of the bails and faggot welding and punching at the other end. We are quite content that we have the process down. It is now time to work on the real thing. Unfortunately, the holidays and holiday presents got in the way. We are preparing to get back to this job, but we are currently expanding Marshall's forge. With three to four people working at one forge it can get to be very very busy.

Besides Andy and Marshall and myself, we have had several other apprentices show up. Norman Nelson from Longstreet Farm comes quite regularly. Another guy came last week. Having a regularly scheduled time at Marshall's allows smiths to work with other smiths and hence improve their skills. I have found the opportunities invaluable especially to learn how to use an oxy-acetylene torch.

Marshall has ordered and received another fire pot. Andy has a big anvil on the way to be delivered this week. They have already cleared out a space for the new forge to the right of the treadle hammer. We will need to fabricate a forge table and hood. Andy and Marshall dropped the hood on the existing forge down to the level of the forge - it drafts much better now. The Pocahontas coal is working fantastically - much less klincker. - David Macauley

Future 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, March 21, 1998. We're looking into holding a meeting at Curby Mills, in Medford, NJ.

Sunday, April 19, 1998. Marshall Bienstock will host a workshop at his forge in Howell (Monmouth Co.), NJ. We are trying to make this another anvil repair workshop, but we still haven't identified a suitable MIG wire for the repair, and rod is too slow. Alternatively, this might become a gas forge building workshop.

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

Events Outside NJ

Sunday, February 1. "MacNeil Trunk Show" will be on loan to the Blacksmith Guild of Central Maryland from the National Ornamental Metal Museum in Memphis, TN. 11 am to 4 pm at the Blacksmith School at the Caroll Co. Farm Museum. Closely examine and handle 18 wrought ironn objects from the 15the throught the 20th centuries. "Awesome." The Carroll County Farm Museum is at 500 S. Center St., Westminster, MD. Westminster is about 35 miles northwest of Baltimore MD. Call the Farm Museum at (410) 848-7775 or toll free 1-800-654-4645.

Sunday, February 1. the **2nd Annual Berkshire Blacksmith's Winter Meet** will be held in Brookfield CT from 9 AM to 5 PM at the shop of Ken Kohut (for map and directions, send SASE to Ken at 30 Olive Street, Danbury CT 06810). There is no pre-registration fee. All Berkshire Blacksmith events are open to the general public as well as smiths. A donation of $5 to $10 is requested to cover expenses. Doors will open at 9 AM. Demonstrators (beginning at 10 AM) will include: Walt Scadden, Manchester, CT; Bob Compton, Shelburne Falls, MA; Bill Senseney, Williamstown, MA; Jim Palkowics, New Paltz, NY; and Tom Spakowski of Cronotron Welding, Hudson, NY. William X. Martin of Danbury CT will display and sell farrier equipment and supplies. Ken's facility is large, well-heated and has restrooms. Food is available nearby.

Saturday, March 28. Furnace Town Blacksmith Guild, Clay Spencer & treadle hammer demonstrating. Due to rising costs, we will be charging $10 this year. For this you get donuts & coffee all day or until they run out, all-day demo, lunch, iron-in-the-hat, auction(?), and sarcasm from Ray (Noble) & Dave (Hutchison). There will be a tailgate sales area.

June 17th through 20th, Asheville, NC. The 1998 ABANA Conference will be held at the University of North Carolina, Asheville. Visit the ABANA Website for up to date information.

Touchstone's 1998

Blacksmith Class Schedule

Touchstone Center for Crafts
RD 1 Box 60
Farmington, PA 15437
Phone: (412)329-1370 or 1-800-721-0177
Fax: (412) 329-1371
E-mail: tcc@hss.net

5/29-31	Blacksmithing-Learn the Basics	David Fink
6/8-13	Candle Power-Candle & Rush Lighting Devices	David Fink
6/15-20	Irons in the Fire	Glenn Horr
6/22-21	Smithing for the Home & Shop	David Brewin
6/28-7/1	Blacksmithing	Ivan Bailey
7/6-11	Details of Joinery	Fred Crist
7/13-18	Damascus Steel & Blade Forging	Ray Rybar
7/20-25	How to Hit a Moving Target	Jonathan Nedbor
7/27-8/1	Open Studio	
8/3-8	Traditional Forging	Bob Becker
8/10-15	18th Century Camping Equipment	Jymm Hoffman (OH)
8/17-22	Damascus Steel	Jim Batson
8/24-29	Basic Forging Techniques	Charlie Orlando
9/4-6	Tools From Scrap for the Beginner	Hans Peot
9/11-13	Blacksmithing	Ray Rybar
9/18-20	Blacksmithing for the Completely Ignorant but Eager to Learn	Jody Best
9/25-27	Blacksmithing	Jymm Hoffman (OH)
10/2-4	Blacksmithing-Learn the Basics	David Fink

Intensive 3-day seminar:

"The Blacksmith - Myth and Science"

(Posted to TheForge by Harry Dunning)

Those of us who work in historic shops or do historic interpretation at other sites may be interested in this item: Hancock Shaker Village (at Pittsfield MA) is sponsoring an intensive three day seminar entitled "The Blacksmith - Myth and Science" on April 3, 4 &5 at the Village. Master Smith Bill Senseney will be the instructor, assisted by Robert de Lisle.

Seminar description states: "This class will cover such topics as interpreting with historic accuracy, the blacksmith in folk lore and song, producing vs. interpreting, program expansion, staying positive, and shop set-up with safety for staff and visitor. Other topics are proper forging skills, hammer and fire control, forge welding, and tool and equipment maintenance. Instruction will include lecture/demonstration and hands-on activity"

A Certificate of Completion will be awarded. The fee is $350. Interested parties should contact William Senseney, 30 Frenier Drive, Williamstown MA 01267 (413) 458-5641

Incidentally, folks in Eastern New York/New England who are looking for blacksmithing workshops for various skill levels should take a look at HSV's offerings. Their web site is http://www.hancockshakervillage.org

Bidding a Blacksmithing Job

[The following are from ABANA's News Group, TheForge. - ed.]

Anyone out there have a lot of experience making door hardware for profit? I've got someone who's building a house with 50 (yes, fifty) doors, and has a list of hardware all keyed to the Ball and Ball catalogue: everything from H-L hinges to suffolk latches to slide bars to strap hinges to quadrants. I've made a few hinges here and there, but never anything close to this variety or quantity. I'm at a loss as to how to bid on the project, other than to make a sample of each item to get a fix on the time involved, which would be totally impractical due to the range of items. As you can imagine, I don't want to underbid, but I think I'd like the job if I could make some money on it. Ball and Ball does have prices, some of which seem high and some of which seem low.

Also, are there any books that go into depth on hardware making? I've got Streeter's book, but I'd love something with a little more detail.

Thanks for any advice. - Whit

Whit -

All I can suggest is what I have done and it works well for me.

Breakdown your list, and make samples of what it makes sense to make samples of. For instance if there are a lot of H and L hinges make a set of each, also a suffolk latch. It is only fair for the client to see a sample of the finished project before ordering anyway.

When making the prototypes keep very accurate notes in your work book regarding time for each process, measurements and any shortcuts you may learn along the way. When you are finished with the samples the client has a good understanding of your competence, and you have a good understanding of what you will need to charge. It will help avoid an uncomfortable feeling later on. Whether you get the specific job or not you will learn from the experience and have sample pieces to hang on your shop wall and to show future clients.

It is also my policy to *never* bid installations, they are *always* time and materials. You never know for sure what your getting into on installations.

I have found I get a lot of repeat clients, or clients who are friends to other clients. If you build a reputation for being fair and honest you will find most people are willing to accept a job without a concrete bid, especially if you explain on much custom work it is exactly that, *custom*, and you can never be sure just how much time it will take. All my installations are time and materials and I would guess about half of my in shop custom work is also time and materials.

hope this helps some, Roger Olsen

The Scrap Corner

(A place of repose for bits and pieces that may sometime be of use.)

It is well known that tradition and practicality tells us that an anvil mounted at the proper height should just touch the knuckles of a loosely clenched fist and relaxed arm. This takes advantage of a full arm swing terminated with the hammer handle horizontal and the hammer face parallel with the work. The result is efficiency of blow and less likelihood of unwanted hammer marks. It's hard to dispute this wisdom, or with the advantage of an anvil mounted at this height when working with top tools or with a helper or striker, especially on heavy blacksmith work. [Editor's note: It is also conventional wisdom that on especially heavy work, the anvil may be mounted substantially *lower* than knuckle-high.]

Now consider another train of thought. Most of us are doing rather light work, ornamental or art. Does your back get tired and ache bending over your anvil for light and accurate hammer control? For what it may be worth to you, get closer to your work and straighten your back: Raise your anvil three or four inches. You decide.

Now, lets have some other hands throw something into the Scrap Corner. - Tim Suter

[In fairness to Grant Clark, who hosted the last two NJBA meetings, I must point out that the above contribution was inspired by Grant's assertion that not only should the anvil be mounted at knuckle height, but that the blacksmith should stand erect while working.

With fifteen years experience as a blacksmith and farrier, Grant isn't just speaking through his hat. He believes that the common practice by blacksmiths and farriers to bend over their anvils is counterproductive and leads to striking blows with the hammer face at an angle to the anvil face. He demonstrated how the blow should be delivered, from an erect stance, and how this stance almost guarantees a good flat blow. Even Grant tends to revert to bending over the anvil from time to time, and that's not necessarily bad. It seems to me that Tim's strongest argument against Grant's approach is vision: Not all of us can see what we need to see from full erect stance to knuckle height. However, this may be best addressed by use of glasses of intermediate focus, between distance and reading, which any dispensary can provide. - Editor]

Welding in a Gas Forge

[I'm sharing the following email from Morgan Hall for the benefit of members who saw the gas forge demonstration at the September meeting and had questions about the possibility of welding, using a gas forge. - Ed.]

Bruce,

Success in welding in the gas forge. I made a twist handle (welded a bundle of 3 1/4" rods together on both ends, twisted, then untwisted).

Welding heat came in at 20 lb.. I think the forge draws too much air at higher pressures, cooling the interior somewhat. [Morgan built his own burner, which is not identical to the one I purchased or the one Marshall built, so the operating pressure he finds best may not apply to mine or Marshall's.] Less scaling, more heat, even though I'm pumping less mixture into it.

To achieve, I built an insulated front and rear wall of Kaowool, wedged up as tight as I could, and ran for 20 minutes to get the heat up. skooshed the front open only enough to get the wire bundle in.

This is a low-heat forge weld. Took thorough fluxing with borax. From the look of the metal, the heat was just barely enough -- I'd not have tried that low with coal.

Got the Gunter recuperative forge plans. Excellent write-up and professional quality blueprints. His forge is a 2-burner, rectangular chamber with swinging front door. The two burners are about the same dimensions as ours, venturi-type, and uses a #60 drill hole as the orifice. The burners have a 45 degree bend in the mixing tube and enter the furnace at the top front (two flames come down vertically just inside the door). The exhaust is at the rear and goes vertically upward. The outgoing exhaust and incoming air cross in a stainless steel heat exchanger, the orifices and mixing tubes are after the heat exchanger, mixture is made with heated air. These are then insulated to prevent heat loss before the combustion chamber.

He's done quite a bit with checking out insulation, and came to the conclusion that the Kaowool type is best.

Gas pressures are lower than we've been running. He estimates that recuperating gives him about 800 degrees F (he's at about 5000 feet).

Morgan Hall

Cape Cod School Of Blacksmithing *Closes*

[Posted to ABANA's newsgroup, theForge]

I would like to announce the closing of the Cape Cod School Of Black smithing. After many years of working on Cape Cod I have decided to close my shop and the school in order to accept a position at Hambel & Associates in Loma Colorado. I have spent almost 20 years working on the Cape and I have had many very fine jobs and customers as well as a great number of students. I am happy to see many of my students starting there own shops here and across the country. I have seen some go from wondering what a hammer was for to using it to create a beautiful flower or scroll. I have had men and women ask me about forging one year and later ask me about the business of selling iron. I remember one older student told me he took the class to find out what the hell black smithing was about if it was not about shoeing horses. after the weekend I confronted him about what he had learned. He held up his blistered hands and said blacksmithing was the process of making something beautiful the hard way, but the only way. I want to thank all my students for all the things I learned from them, and for the confidence they had in me.

I do not know if I will be teaching in Colorado, I do have permission to teach at Hambel but I am not sure of the need there. I know there is a school in the mountains at Carbon dale. So once again thank you all for the support and good luck in your adventures. I will be off-line from about Jan 1st until the end of Jan. and then will look up this site again.

Thank you, - Bob Jordan

Flue Draft and Smoke Shelves

by Dan Cruzan

I have a background in mechanical engineering and have done some research on chimneys, etc. One of the first things I learned was that you're supposed to say something like that if you want people to take you seriously.

Chimneys work because of gravity. Gravity pulls downward on the air in the atmosphere creating pressure at the surface of the earth. There are several factors which influence this pressure but most don't need to be considered in this discussion. One factor that must be considered is elevation. At a high elevation there is less atmosphere above the observer being pulled down by gravity than say at sea level. Therefore the "atmospheric pressure" is less on a mountain top than at sea level if all other factors are equal.

If we take a pipe and stand it on end at sea level and the length of the pipe is equal to the height of the mountain, the atmospheric pressure at the bottom of the pipe is the same as at sea level, and the atmospheric pressure at the top of the pipe is the same as at the top of the mountain. If we shorten the pipe and call it a chimney, the difference in atmospheric pressure between the top and bottom is less, but is still less at the top then the bottom. As long as nothing influences the column of air in the chimney it just sits there. If however, a woodpecker takes off from a spruce tree, say a mile away, an air disturbance is created which eventually reaches the chimney and dislodges one of the molecules of air right at the top of the chimney knocking it out. A molecule below it will be pushed up into its place by the molecules below it which have ever increasingly more hydrostatic pressure on them as you go down the chimney. A chain reaction occurs as molecules are forced into the void created above them until a molecule at the very bottom of the chimney leaves a void which is filled by one outside the chimney. Gravity is causing this to happen. On a Windy day the chain reaction happens very fast and very often. On a calm day not as fast or often. Let's call this movement of molecules natural draft.

Another factor we must consider is temperature. If we take some warm air the force caused by gravity pulling down on it is less than the some volume of cold air because the molecules are farther apart and thus the density of the warm air is less. In fact if we have some very warm air the gravitational force on it will be even less than the gravitational force on the air at the top of our chimney. If we put the warm air in the bottom of our chimney and release it (assuming that it somehow stays warm) it will move through the cold air in the chimney as the cold air pushes under the warm air because it is being pulled down harder by gravity than the warm air. Let's call this movement thermal draft.

When natural draft and thermal draft are combined the movement of air through the chimney can be considerable. However a chimney by itself is of little value. If we build a fire, say 4' below the chimney some smoke (similar to warm air) is bound to enter the chimney due to natural draft. Some smoke will probably also enter due to thermal draft but because the fire is so far away much of the heat is lost so the potential thermal draft is largely lost. If we build an inverted funnel at the bottom of the chimney it will help to capture some of the smoke but we still aren't able to use the full potential natural and thermal draft. That's why inverted funnel hood forges are the poorest at carrying away smoke.

If we place the bottom of the chimney very close to and directly above the fire we can get the full benefit of natural and thermal draft, but the chimney is in the way. If we move the bottom of the chimney just to the side and just above the fire and build a hood with the opening directed toward the fire we can still get most of the potential benefits of natural and thermal draft. If we experiment with the size of the opening of the hood so that it is just the right size to allow the passage of the products of combustion from our fire we have a side draft forge that won't smoke up the shop.

A smoke shelf is a ledge typically built at the back of a fireplace in the area of transition from firebox to chimney. In a situation where a fire is consuming more fresh air than is entering the building, fresh air will be pushed in by gravity through every available crevice. one of the openings available is the chimney. If the air pressure in the building becomes less than the air pressure at the top of the chimney air will be pulled, by gravity, down the chimney at the same time smoke is being pushed, by gravity, up the chimney. The two flows each find their own path. It was found many years ago that a smoke shelf helped to direct these two flows so that smoke was less likely to enter the building. The argument that a chimney draws better with a smoke shelf because of a venturi effect doesn't hold water. According to Bernoulli's principle if a venturi was created by the smoke shelf the velocity would increase and the pressure would decrease only in the constricted area. As soon the flow is through the venturi it assumes whatever velocity and pressure is required to satisfy the equation of continuity which simply say that everything that goes in has to come out. A venturi or a smoke shelf will not make a fireplace forge or anything else draw better, but it may help get smoke out of a building that doesn't have enough fresh entering it. If you've read this far I'm amazed and hope this helps you in some small way.

Equipment For Sale

- Post Vise, ~4" jaws, marked "NY Central RR", $35
- 2 Fire Pots, sized ~6"x8" and ~8"x10", $35 each.

Contact: Don Heliker, (732) 542-0771

Suggested Demonstrations

Posted to TheForge by Chris Worsley Alexandria VA

[Interested in doing a demonstration at one of our meetings? Here are some suggestions. - Ed.] Here are some of the demos that we have had at BGOP meetings over the past few years:

- Decorating rivet heads,
- Nail making,
- Joinery techniques,
- Scrolls,
- Double striking competition (teams),
- Twists,
- Treadle hammer demo,
- Engraving demo,
- Forging chisels and punches,
- Hardening and tempering chisels and punches,
- Forge welding,
- Torch welding and cutting,
- Tong making,
- Favorite tool show and tell,
- How to demonstrate to the public,
- Andiron forging,
- Beginners problem solving (fire building, basic tools),
- Cold forging silver,
- Upsetting square corners,
- Cold forming copper,
- Garden trowel forging, and
- Open Forge nights...nothing planned, but something always develops.

When possible, we have video nights, and folks bring in demo and historical tapes.

Blacksmith Journal T-Shirt

The Blacksmith Journal has a catalog (See their web site: http://www.usmo.com/~journal) that includes a T-shirt inscribed as follows.

You know you're a blacksmith if...

- your boogers are black -
- your shirt is full of holes
- you're hearing impaired
- you shave less than twice a week
- it's no big deal whenyou catch on fire
- you don't knowyour shop dog's real color
- your grandfather wasn't a blacksmith
- you never charge enough foryour work
- you stand around a fire when its 100 degrees in the shade
- the dog in the scrap yard doesn't attackyou
- one ofyour arms is bigger than the other
- it rains coal dust whenyou scratchyour head
- "horseshoeing" means scaring them away
- your idea of a family vacation includes a tool sale.

Heat Names

- David Wilson

In the book "Hammer and Tongs, Blacksmithery down the Ages," author Gary Hogg lists ten names for heat. He says "skilled use of bellows, deft use of slice, rake and dowsing twigs is necessary to obtain so many varied heats." Also Hogg says that a double acting bellows has advantage over electric fan to adjust to these temps. The heat names are, in descending order with hottest first,

- Snowball Heat, what we also call white heat. Required for welding the best quality iron. It reduces iron to "sponginess".
- Three other commonly used degrees of welding heat,
- Full
- Light
- Slippery, Greasy or Sweating
- Bright Yellow
- Bright Red
- Below these, for final shaping and smoothing, are,
- Cherry-Red
- Dull Red or
- Blood Red
- Black Heat, used for finishing with oil or matte surface. Not visible in full daylight, but glows very faintly in deep shadow.
- Warm Heat, glow cannot be seen even in dark. Produced by passing metal slowly over moderate fire. Used for 'setting up' springs. Too hot for even the toughest hands to hold.

Bowling Ball Engraving Vise

Here's a tip concerned engraving vises. If any of you are beginning engravers, and I am not even at that point yet, the subject of an engraving vise causes stomach problems and heart ache. Not many of us can lay out $600-$2000 or more for one of those beautiful machines. A friend who does some very fine engraving gave me the secret to solving this problem.

Get the heaviest old black bowling ball you can find and saw off the portion with the finger holes in it -- about 1/3, or a little more, of the ball. Smooth off the surface and drill and tap four holes to mount a piece of plywood or pressboard of some sort. Let your imagination control here. Once the wooden surface is in place, the metal to be engraved can be attached using tacks/nails or screws around the edges. Then place the rounded side of the ball into a wooden box a little bigger than the ball into which you have placed a number of small sand bags to nest the ball in. You now have a fully rotatable holder that has good mass to allow you to start engraving on. The work surface can be tilted to any desired direction as needed.

I thought his solution was a wonderful one, and when you see his work you would never suspect he uses a "make-do" vise of this sort. - Ron Reil,

(rreil@micron.net, http://www.webpak.net/~rreil)

Assistance Solicited for Web Site

We've been featuring our website address (www.njblacksmiths.org) under the masthead for the past several issues. Your editor has recently been working on our web site as time permits, but time hasn't been too permissive. I have gotten around to adding a couple of the oldest newsletters, the bylaws, a list of the directors, etc. We are willing to expand this resource, but would like some input from the membership. Please visit the website and let us know what you think. If you would like to help with the website in any way, let me know.

Bruce Freeman

Contacts

(Here are some your editor has picked up off the Internet. Let us know if you have any favorites you'd like to share.)

Gas Forge Supplies:

Ward Burner Systems
P. O. Box 333, Dandridge, TN 37725
(423) 397-2914; wardburner@aol.com

Ward Burner Systems catalog lists numerous accessories like regulators, valves, insulation, adapters, burners, pyrometers. Primarily for raku kilns but good source.

Charcoal:

Holland Sales, 901-324-1418
508 Cumberland Street, Memphis, TN 38112-2618
Lump charcoal available by the bag or by the truckload.

Humphreys Charcoal Corp.
Brookville, PA 15825
Excellent quality hardwood charcoal in 20 & 40 lb. bags.

Pocahontas Coal -- Now Available in New Jersey

In recent months there has been much discussion on ABANA's Internet news group ("TheForge") about Pocahontas coal, a premium blacksmithing coal from West Virginia. Now we find that NJBA member Dan Cruzan has up and ordered over 20 tons of the stuff. He brought some to the December meeting, and demonstrated it. Those who participated thought well enough of what they saw to buy out the few hundred pounds of the coal that Dan had brought with him. Persons interested in buying coal from Dan should contact him directly.

Ash-Stick "Thermometer"

Posted to TheForge by BadIvan@aol.com

A test for lower temperatures encountered when forging aluminum and brass is to rub a dry ash stick on the hot metal. The temperatures are indicated by the effects on the stick. This test is also useful when heating iron in the blue heat range.

660 F. Becomes sticky
680 F. More greasy
700 F. Starts to slide
720 F. Slips easily and starts to smoke
735 F. Slips very easily, smoke and a few sparks
750 F. More sparks
770 F. Lots of sparks
790 F. Starts to flame

SLUG PUNCH FOR COPPER BUSS BAR AND COINING DIE FOR MAKING BUTTONS
JIM HANDZEL

From UMBA Newsletter

For those of you who missed it at Burlington, here are the tools Jim has come up with for making his copper buttons that have been such a hit at the auctions lately.

The punch was made from tool steel and hardened

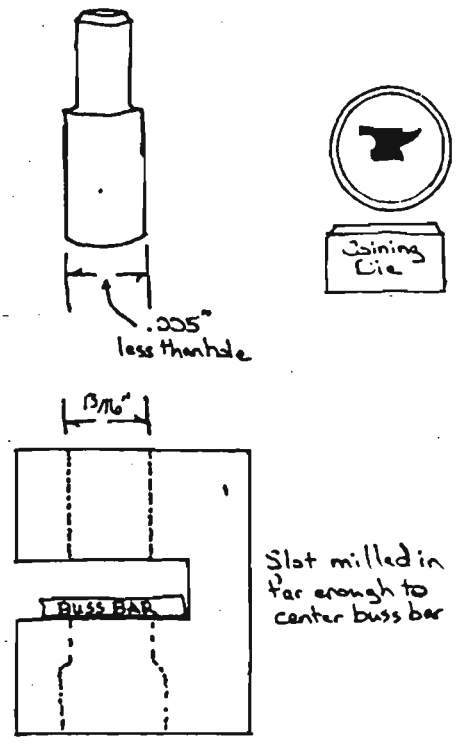
The die was made from 2" round cold rolled

The coining die was made from tool steel and the impression made with a pantagraph milling setup. This could also be done the hard way ala' Robb Gunter.

Two blows from the treadle hammer on the cold buss bar and you have yourself a perfect button.

Jim then heats the button with a propane torch. Two more blows from the treadle hammer with the button carefully centered over the coining die and you're done.

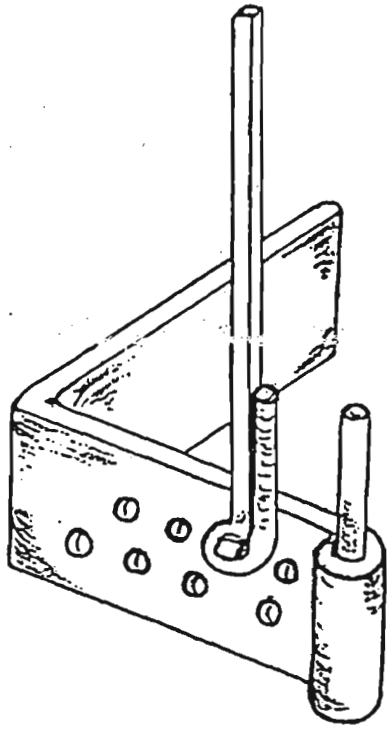
He drills a small countersink in the back and silver solders in the pin.



Reprinted from *Fire & Iron* - Northeast Blacksmith Association
by Carl Davison

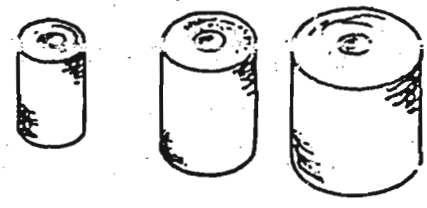
Variable Size Radius Bender

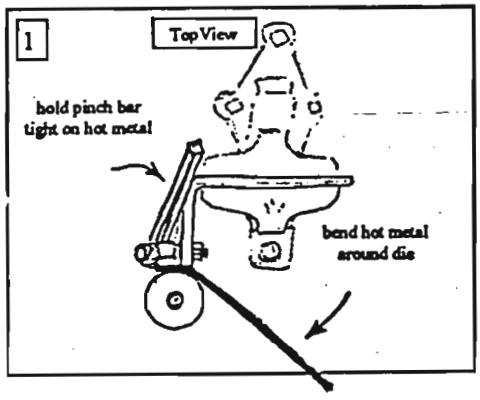
Having had a need for bending multiple rings in two different specific sizes was the inspiration for this jig. Made to mount in a vise, a piece of square stock sized for your hardy could be welded on if preferred. The changeable dies are standard mild round stock center drilled. Pipe with welded & drilled cross plates work well for larger sizes. Odd sizes can be turned on a lathe or forged and drilled. After bending a full circle the die sometimes rides up as you remove the stock. A hole can be added at the top of the die post for a cotter pin to secure the die in place. If you are changing dies back and forth it is easy enough to tap the die down if it rides up during stock removal. Lightly break edges on 1/2" pinch bar so hot work is unmarked when bending.

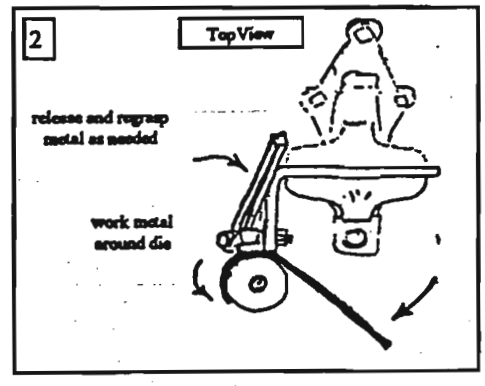


Materials List

1/4" x 2" x 14"	mild steel
1/2" sq. x 17"	mild steel
4" x3/8"	drill rod
5/16 x 1 1/2"	machine nut & bolt







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How to Join the 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** (NJBA membership)**, 222 Laurel Place, Neptune, NJ 07753**, along with your completed membership form. 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 will not owe renewal dues for fourteen months.

(This information will be listed in a roster available to other members.)

Name_____ Home Phone_____

Address, City, State, Zip_____

New Jersey Blacksmith Association

Newsletter

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