New Jersey Blacksmiths Association

NEWSLETTER

Volume 3, No. 4 May, 1999

Notices to Other ABANA Chapters:

NJBA is now mailing newsletters to all other ABANA Chapters. We appreciate receiving your newsletter in return, but please be sure to mail it to Tim Suter, **not** *to Bruce Freeman. (See list of directors' addresses elsewhere in this issue.) Your cooperation will save us the time, trouble and expense of forwarding these many issues. We will likewise endeavor to maintain our mailing list with your up-to-date address.*

In addition, NJBA offers to publish event announcements for nearby events or events of wide interest. Please send these announcements directly to Bruce Freeman, preferably by email, for timely inclusion in this newsletter. - Ed.

Peters Valley Scholarships!

Peters Valley Craft Education Center has generously extended two 50% scholarships to NJBA members. Each scholarship will pay 50% of the tuition of a 5-day workshop, or the same monetary value to a longer or shorter workshop. (Scholarship recipients will be responsible for application fee, lab fee, meals and accommodations. See "Workshops in New Jersey," later in this issue, for more information on Peters Valley workshops and fees.) Scholarships are open to any NJBA member, regardless of experience or need. Each scholarship is valid only during the 1999 season. ***Applications are due no later than May 27.*** That's ***now! Don't Delay!*** (The deadline will be extended only if we receive no applications by this date.)

To apply for a Peters Valley scholarship, please send the following information to Bruce Freeman (by email, if possible): Your **name, address,** day and evening **phone numbers,** and your **email address** if you have one. Please indicate **which** Peters Valley **workshop** you would like to attend, and affirm that you are aware of all charges and are able to afford those not covered by the scholarship. Please write a short paragraph on each of the following three questions: **(1) What is your education, training and experience** in blacksmithing, metalworking, or arts and crafts in general? Are you an amateur, a student or a professional blacksmith? **(2) Why would you like the scholarship?** What difference would it make to you? Do you feel you are especially deserving of the scholarship? If so, why? **(3) In what way would you be willing to share what you learn from the workshop?** For example, you could write an article, or prepare illustrated notes of a demonstration, for the NJBA Newsletter; or you could demonstrate at an NJBA meeting or hammer-in.

... and More Scholarships!

The NJBA Board has voted to fund one scholarship to be awarded to an NJBA member. The NJBA Scholarship Committee has not yet reported back to the board, so the following information is tentative. This will be a $250 scholarship, applicable to a blacksmithing workshop at any appropriate school, and will be awarded at least partly on the basis of need.

In addition, ABANA has a scholarship program, and NJBA has forms available for those ABANA members who wish to apply. Contact David Macauley for further information.

May Meeting: Hammer-in and Elections

The May meeting will be on **Sunday May 23rd, 10 AM** at **Longstreet Farm**, Holmdel Park, Holmdel (Monmouth Co.), NJ.

This meeting will be a general hammer-in. Our goal is to have several smiths demonstrate blacksmithing to our members and the public. The setting will the blacksmith shop and surrounding area. We encourage you to **bring your portable forging equipment** so we can have as many forging stations as possible. We have use of the blacksmith shop at Longstreet which has one forge. Other forge stations will be set up around the main farm square. NJBA will supply the coal and some stock for the demonstrations. If you have any specific stock requirements please either **contact David Macauley** or bring your own stock. Some suggestions for demonstrations include: Tong making, hot cutters, hardy tools, barn hardware including strap hinges, hasps and latches.

Lunch will be provided. There will be a brief business meeting over lunch to **elect directors** and discuss up coming events. There will be an **Iron in the Hat** so please bring your donations. There will be no tailgate sale.

Directions to Longstreet Farm: **From the North:** Take **Garden State Parkway exit 114**. After paying toll, make a **right onto Red Hill Road** at the 1st light. At the 2nd light make another **right onto Crawfords Corner Rd**. Pass the very large Lucent facility and make a **left onto Roberts Rd**. Take Roberts Rd. for about 1 mile. Make a **right onto Longstreet Rd**. The park entrance is about 100 ft on your left. Longstreet Farm is adjacent to the main parking lot on the left as you enter the park. The blacksmith shop is the 1st building on the left of the main farm house. **From the South:** Take **Garden State Parkway exit 114**. Proceed up the exit ramp to the light make a **left onto Red Hill Road** and follow the instructions above.

June Meeting-- Cold Spring Village

Saturday and Sunday, June 19-20. David Macauley is heading up the efforts to hold a two-day demonstration in conjunction with Cold Spring Village's annual "Tools,

Tractors, Trucks and Engines" event. There will be displays and demonstrations of hand and machine tools (including blacksmithing tools, thanks to us), antique tractors, farm equipment, small engine exhibits. Anyone interested in demonstrating should contact David. Further details will be sent by postcard.

July Meeting

We are looking into holding the July meeting on Friday, July 23 at 7 pm at the Monmouth County Fair. We'll keep you posted by postcard or newsletter.

August Meeting -- Hood Workshop

The side-draft hood workshop originally slated for May has tentatively been postponed until August.

Monday Night Open Forge . . .

As many NJBA members know, Marshall Bienstock holds an open forge meeting at 7 pm *every* Monday evening. (See "NJBA Directors" for address and phone.) These are NJBA-sponsored events. Two coal forges and a gas forge are available for use. Up to now there has been no charge to attend this open forge. In an attempt to make this a self-supporting event, we are now in the process of working up a fee schedule to cover the costs of steel and fuel.

This is a great venue for beginners, but all are welcome. Note that we have some coal, available locally from Summit Tech (see "Unclassified Ads") in for you to try out. We hope to see you there. Please note: Protective eyewear is required, and hearing protection is strongly recommended.

. . . and the Grasshopper Hammer

While there you can see, and perhaps try out, the newly completed "Grasshopper" Treadlehammer. The Grasshopper Treadlehammer is a vertical-motion hammer that gets its action from the "grasshopper" straight-line motion, one of several "straight-line motions" (i.e., mechanisms) known at least since steam engine days.

The Grasshopper Treadlehammer was inspired by Richard Sheppard's "Big Lick" hammer, and later by Clay Spencer's roller-blade wheel design hammer. The former uses a ram on slides, the latter a ram guided by wheels. The Grasshopper Treadlehammer, by contrast, uses no slides or wheels (except for cable pulleys), but only simple pivot joints. The Grasshopper Treadlehammer also has a large clearance around the anvil. There's about a two-foot clearance above the anvil, for example.

Those of you who won't get a chance to stop by can view the Grasshopper Treadlehammer over the Internet at URL: http://www.monmouth.com/~freeman/bmf/grashopr.htm - Ed.

Report on the December Party

Marshall and Jan hosted the December Holiday Party. The party and potluck dinner attracted about a dozen members and spouses. Dinner included pasta, salads, smoked pheasant and home-brew. We had our first chance to meet some of the spouses.

Report on the January Mtg: Orange Co. Farmers' Museum

The January meeting was held at the Orange County Farmers' Museum (in NY). Larry Brown, Marshall Bienstock, David Macauley (with Bruce Hay striking), and John Rais demonstrated. Unfortunately, nobody submitted a report on the meeting, but the consensus was that it was excellent. Their facility is very good and the lunch they provided was exceptional. -Ed.

Report on the February Meeting: The Blacksmith of Trenton

The February meeting was held at Alex Parubchenko's commercial blacksmith shop in Trenton. [Bill Gerhauser and I stopped by a few weeks ahead of the meeting to meet Alex before the NJBA meeting there on Sun. Feb. 27. Turned out it was fortunate for me that we did, because I was sick that weekend and missed the meeting. Unfortunately, nobody submitted a report on the meeting, but a couple folks have told me it was truly excellent and very well attended. -Ed.]

Report on the March Meeting: Furnace Town Joint Meeting

The March meeting was the annual Furnace Town Joint Meeting on March 20, of which NJBA was for the first time a cosponsor. Apparently only about six or eight NJBA members attended, but we made a substantial contribution to the IITH, thanks mainly to Tim Suter.

(The following report is by Albin Drzewianowski, with contributions by Robb Gunter, as edited by Jim McCarty for The Anvil's Ring, and excerpted here from Jim's posting on theForge.)

Rob Gunter was the demonstrator. As part of the demonstration he gave us the history behind Super Quench. Super Quench was a replacement for a lye quench which he had been using. (Lye is extremely caustic, and therefore dangerous.) Rob experimented until he found a combination which gave the same results as the lye quench. Through extensive testing with high tech equipment that he had available to him at Sandia National Lab he was able to determine that "Super Quench" gave the same results as the lye. At this point he stopped the testing as he had found the solution to his problem.

A considerable amount of testing was done at Sandia National Labs on what was then called the "Soap Solution Quench". The results verified that 1018 (mild steel) would harden to 43 to 45 Rockwell C all the way through a 1 inch round sample. Other low to medium carbon and alloy steels were found to harden anywhere from 43 to 62 Rockwell C. .55 points of carbon seems to be the limit for practical use. The Super Quench is too severe above .55 points of carbon and you'll see lots of cracks and part failure. This quench offers tremendous possibilities in the blacksmith's shop to harden (and toughen) many less expensive steels to make great tools

easily. Robb uses it to toughen hot rolled A-36 to make springs, especially for slap or swaging dies, treadle hammer dies and tooling, bending forks, vise dogs, drifts and pattern top tools to name a few.

The formula, now adjusted for the more concentrated Dawn dish soap, is: 5 gallons water 28 ounces Dawn dish soap (formerly 32 ounces), 5 pounds table salt, 8 ounces Shaklee Basic I. Quench at 1,550 degrees F. (Cherry red but below orange.) The Super Quench must be stirred each time before use as it tends to stratify but freezing doesn't seem to be a problem. Robb says that alternative wetting agents such as Jet Dry don't work as well as the Shaklee Basic I.

Report on the April Meeting

The April meeting was held at the Heines Homestead blacksmith shop in Islip, Long Island, New York. Demonstrators were John Vecchio, Jon Folk, Tim Miller and Julius Molnar. Twenty-five people showed up for the day's activities. John Vecchio discussed the making of scroll tools and scrolls and the use of a small hydraulic press for several purposes, including making the "Claydon Joint." (This press is made by Shop Outfitters of Laramie, WY, and is available assembled or in kit form. Ph: 307-745-5999.) Jon Folk showed us his "last year's" project, a window grill involving a number of silt and drifted bars with penny ends. He discussed his process and contrasted it to others. Tim Miller demonstrated making a snub-end C-scroll. Julius Molnar finished off the meeting with some freehand demonstrations of leaves, scrolls, etc.

Events Elsewhere

May 22-23, Appalachian Blacksmith Assoc. Spring Conference at Cedar Lakes, WV. Bob Becker will be demonstrating. For information call David Allen (304) 624-7248

July 1-4, 1999, CanIRON 99, Calgary, Alberta. Demonstrations, gallery, trade show. For information, contact Rob Sadowski (rob.sadowski@sait.ab.ca), 1301 16 Ave., N.W., Calgary, AB, Canada T2M 0L4, Ph: 403-284-7274, FAX: 403-284-7178; or Bob McRae (mcrae@cadvision.com), 4410-16A St., S.W., Calgary, AB, Canada T2T 4L5; or visit http://www.sait.ab.ca/caniron.

The Expanded NJBA Board

It won't take more than a glance at the directors list to see that things are changing on the NJBA Board -- It's a lot bigger now. We've made an effort to elect a number of active and interested NJBA members to the board. We feel that this influx of new directors will make NJBA more dynamic and more responsive. Feel free to contact any of these directors to express your interests and concerns, or if you'd like to attend the next board meeting. Don't forget to attend the upcoming elections meeting to confirm these new directors and the others who come up for reelection this year -- or to nominate yourself or others as directors.

NJBA Board of Directors

Marshall Bienstock, Director until June, 1999
663 Casino Dr., Howell, NJ 07731
732-938-6577 732-780-0871
mbienstock@worldnet.att.net

Larry Brown, Director until June, 1999
90 William Ave., Staten Island, NY 10308
718-967-4776
lnbrown@con2.com, brownln@hotmail.com

Bruce Freeman, Director until June, 2000
222 Laurel Place, Neptune, NJ 07753
732-922-8408, 609-716-2827
freeman@monmouth.com, freemanb@pt.cyanamid.com

Jon Folk, Director until June, 1999
P.O.Box 143, Old Bethpage, NY 11804
516-474-3109, m425268@nassaulibrary.org

Bill Gerhauser, Director until June, 2000
415 Hutchinson St., Hamilton, NJ 08610
609-394-1817, bgahow@earthlink.net

Josh Kavett, Director until June, 1999
471 Casino Dr., Farmingdale, NJ 07727
732-431-2152, jakavett@aol.com

Bill Ker, Director until June, 1999
Box 14, Allenwood, NJ 08720
732-223-4188, KemoKimo@aol.com

Doug Learn, Director until June, 1999
14 Independence Way, Doylestown PA 19801-2253
(215)489-1742, doug.learn@Primedica.com

David Macauley, Director until June, 2000
4 Patricia Ct., Howell, NJ 07731
732-206-1568, 732-949-8422
drm@anchor.ho.att.com

Nate Pettengill, Director until June, 1999
24 Byron Rd., Short Hills, NJ 07078
npetteng@motown.lmco.com

Steven W. Rhoades, Director until June, 1999
513 Harding Highway, Vineland, NJ 08360
609-697-4144, hotiron1@juno.com

Bruce Ringier, Director until June, 1999
201-652-4526

Andy Vida-Szucs, Director until June, 1999
13 Old Monmouth Rd., Freehold, NJ 07728
732-308-9039, 732-957-6043
osan@netlabs.net

Tim Suter, Director until June, 2000
1112 Ladner Ave., Gibbstown, NJ 08027
609-423-4417

Blacksmith Workshops in NJ

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

Tuition is $312 for a 4-day course $380 for a 5-day course or $420 for a 6-day course. Lab fees range from $30 to $70 per course.

Levels: "B" = beginner, "I" = intermediate, "A" = advanced

Date	Instructor(s)	Title	Level
May 21-25	Dale Wedig & Rico Eastman	"Rolled, Folded, Spindled, Bent & Beaten"	B to A
May 28-Jun 1	Dan Radven	"Iron Furniture: Challenging the Familiar"	I to A
Jun 4-7	James Viste & Brad Nichols	"Hydraulic Press Work & General Forge Practice"	B to I
Jun 11-15	Jonathan Nedbor	"How to Hit a Moving Target"	I to A
Jun 18-22	Stephen Yusko	"Sculptural Containers & More"	I
Jun 25-29	Doug Wilson	"Traditional Joinery / Contemporary Design"	I
Jul 2-6	Rick Smith	"Containers & Box Forms"	B to A
Jul 9-13	Bobby Hansson	"Tin Can Art"	B to A
Jul 16-21	Carl Close, Jr.	"Gothic Details & Metalworking Techniques/Table Lamp Workshop"	I to A
Jul 23-27	John Rais	"Forging Titanium: The Introduction"	I to A
Jul 30-Aug 3	Paul Casey	"Multiple Parts & Mechanisms"	B to I
Aug 6-10	Scott Lankton	"Pattern Welding Steel"	I
Aug 13-17	Corrina Mensoff	"Forged Iron & Copper"	B to I
Aug 20-25	John Rais	"Contemporary Forged Hardware & Beyond"	B to A
Aug 27-Sep 1	Jim Wyckoff	"Making Metal Move"	B
Sep 3-7	Bill Brown	"Sculptural Forging"	I
Sep 10-14	Elizabeth Brim	"Basic Blacksmithing"	B

A Master Blacksmith

For more than 40 years after it was built Alcoa's Davenport Works had one full time industrial blacksmith. (This is the worlds largest aluminum rolling mill with about 129 acres under roof.) Today they have decided to buy out the things he once made. When I had the shops back in the early 80's we still had the smith and the machinists were always surprised at the quality of tools that Harry could make. What really got them was that he could forge tools that were round and to size within 0.005 inch on the dia. Today I know that Harry did this with a spring fuller under the power hammer -- still first class work.

The other thing that Harry was noted for was that he could straighten anything. It is hard to believe how much damage can be done to equipment in a heavy rolling mill. The mill mechanics would bring things in to the shop and leave them in the back by the blacksmith shop for Harry to find in the morning. With heat, hammer, and hydraulic press, they would get a straightened item back by the end of the shift.

The smith that came after Harry could never measure up to the old master and that is part of the reason there is no smith there today. (The other part of the reason is the lawyers...) - Dave Smucker.

Blacksmithing Workshops in MD

Academy of Traditional Arts
at the Carroll County Farm Museum
500 South Center Street, Westminster, MD 21157
(410) 848-7775, (410) 876-2667
Classes are $100 per person. Call for further information.

Date	Class Description	Instructor
Jun 5-6	Basic Blacksmithing	Albin Drzewianowski
Jun 26-27	Cabinet Hinges and Door Pulls	Ken Schwarz
Jul 24-25	Basic Blacksmithing	Albin Drzewianowski
Nov 2 & 9	Blacksmithing Christmas Items	Bob Morris

Blacksmithing Workshops in PA

Touchstone Center for Crafts
R.D. #1, Box 60, Farmington, PA 15437
Ph: (724) 329-1370; FAX: (724) 329-1371;
Email: tcc@hhs.net; Internet: www.touchstonecrafts.com

Touchstone Center for Crafts in Farmington, Pennsylvania (southwest corner) has completed the foundation for the Hart Moore Blacksmith School. Ten new forges will be used by all classes in the new building for the entire 1999 season. The old tuition rates established for the stable will still be in effect this season. Please list our classes and, if you will, provide a hot link to our web site at for more specific information and reservations. (Abbrev: "B" = beginner, "I" = intermediate, "A" = advanced.)

Date	Instructor	Class Description	Level
May 21-23	Jymm Hoffman	"Beginning Blacksmithing"	B
Jun 7-12	Michael Saari	"Sculptural Furniture"	I-A
Jun 14-19	Glenn Horr	"Irons in the Fire"	B
Jun 21-26	Roberta Elliott	"Playing with Fire"	B-I
Jun 28-Jul 3	Jay Burnham-Kidwell	"Forged Furniture"	B-A
Jul 12-17	George Dixon	"Chase, Chisel & Repousse Motifs of Samuel Yellin"	I-A
Jul 19-24	Federick Crist	"Toolmak'g for Architect'l Blacksmith"	B-I
Jul 26-31	Ray Rybar	"Damascus Steel & Blade Forging"	B-A
Aug 2-7	Bob Becker	"Traditional Forging"	B-A
Aug 9-14	Tom Latane	"Ornamental Lockwork"	A
Aug 16-21	Jim Batson	"The Highland Dirk"	B-A
Aug 23-28	Peter Ross	"Historic English Decorative Iron"	I-A
Aug 30	Sep 4 Mike Boone	"Forging a Decorative Grille"	I-A
Sep 10-12	Ray Rybar	"Basics of Damascus Knifemaking"	B
Sep 17-19	Ivan Bailey	"Hand-Forged Small Animals"	I-A
Sep 24-26	Jymm Hoffman	"18th C. Camping Equipment"	I
Oct 1-3	Hans Peot	"Tools from Scrap Steel for Beginners"	B-A
Oct 8-10	Jody Best	"Blacksmithing for the Completely Ignorant but Eager to Learn"	B-A
Oct 15-17	Glenn Horr	"Using a Hand-Held Air Hammer"	I-A

Wootz Steel

I have been following the thread (on theForge) on wootz steel for some days now and have decided to come out of lurk mode and through my hat into the ring. First let me state that what I have been reading is two distinctly deferent processes for making steel. One process that I have read about essentially describes fourteenth century blister steel. This process is as follows:

Charcoal was essential in the production of carbon steel. In early times steel was usually a fortuitous by-product of making malleable iron. In the fourteenth century however most steel was made deliberately from wrought iron,-just as wrought iron was made deliberately from cast iron. The transition form iron to steel was quite simple. Pure iron rods or bars were packed in charcoal dust in a furnace and the dust was then fired and blown with a bellows for a varying period of time, depending on the size of the iron being treated. Once the iron became white-hot it began to absorb carbon from the charcoal at a rate of 1/8 inch of absorption every twenty-four hours.

Accordingly, thin bars of iron turned to steel in a day's time, while larger, thicker bars needed longer treatment. As might be expected, the degree of carbon in the center of the bar was less then the outside surface, but generally iron made into steel by this primitive method contained from 0.3-percent to 2.2-percent carbon and could be tempered, though the tempering of each piece was slightly different from others.

This product, so invaluable for making weapons and tools was called "blister steel," because the high heat over the hours and days gave it a blistered appearance. Some also called it "shear steel," because it's main uses were in making shears and other cutting instruments that required a hardened edge. It was also easily welded to iron, so that old axes, plane bits, drawknives, and scissors were made of the more plentiful soft iron with a steel edge welded on. The quality of blister steel was uneven and undependable, necessitating testing to determine the proper tempering heat for each individual piece being used.

While Europe and its New World colonies suffered the inconvenience of blister steel for centuries, in the Orient, particularly in India, another type of greatly superior steel had been in use since the early Christian era. This was known as wootz steel. At the time it was the finest steel in the world, with an even texture and carbon content, the fabulous swords of Damascus were made of wootz steel.

The Europeans became familiar with wootz steel during the latter days of Roman Empire, when the professional warriors of Europe noticed the superior quality of the Saracen weapons during the Crusades and brought back samples of wootz steel to their personal armorers during the 11th., 12th., and 13th centuries.

When European nations established colonies in the East during the period of exploration after the fifteenth century, wootz steel became an important article of commerce.

As follows is the process of making wootz steel: As with blister steel, wootz was made by carbonizing pure iron! Instead of using charcoal as the source of carbon, however, the Oriental steel makers used molten cast iron with a high carbon content.

A faggot of pure iron plates was immersed in a crucible of molten cast iron. By capillary action the highly carburized cast iron was drawn between the thin plates of pure iron, and as the pure iron was heated almost to the melting point it absorbed more carbon! The mass was allowed then to harden into an ingot, which was worked into weapons and tools.

Wootz steel, though more easily tempered, was hard to forge (and here is the secret and why it is so hard to work this steel), which may clarify the Oriental technique of shaping swords, axes, and knives with a minimum of smiting. They found out that wootz steel could not be worked below a blood-red heat: If it was, the metal "red seared" or cracked, just as with pure iron when worked at any heat between a blue and a sunrise red.

Modern analysis, through the science of metallography, shows that wootz steel is composed of a mixture of granules of soft iron and high-carbon steel. This composition the beautiful patterns found in true damascus swords and never truly duplicated by to days modern smiths.

Al Pendre and Co. can work this type of steel for the simple reason that he has been doing it for a long time, and he has a #250 little giant that makes the swamp jump up and down in Florida.

I have one parting comment, many, many months ago someone made the statement that wootz steel was about 10 levels above modern day steels? I don't think that this statement is quite true. Logic and the number of metallurgy books I have tell me different. The reason the swords that where made of wootz steel could cut a free floating silk scarf was purely in the sharpening and polishing technique. Today's smith given modern steel and a couple hundred dollars of Japanese waterstones can do it. Just ask Dr. H.

This was a comprehensive study of wootz steel. A historical and metallurgical breakdown of a given process. Sources are *Metallurgy and Metallurgical Engineering Series* Vols. 1 to 4, *Metals Handbook* Vols. 1 to 5 the properties and selection of metals, *The Metallurgy of Steel Castings*, and a whole lot more that are to numerous to mention.

-- Charles "Chuck" Osier, Cross & Anvil Gun and Knife Shop

Coal Available in Cranbury

Summit Tech, a farrier supply house at 2715 Route 130 South, in Cranbury, NJ 08512, now has blacksmith coal (from Cooney Bros., near Altoona, PA) for sale at his store at $10 per 50# bag. (A discount is available to organizations.) Store hours are 9-5 M-F, Wed till 9. 1-800-325-3357.

They have donated a 50# bag of this coal to NJBA. It is not size-graded, but includes everything from powder to lumps as large as 5". I found it decent coal, comparable, except for the size, to Pocahontas. I did not work it long enough to assess clinker formation, but I saw no problem. -Ed.

Questions to theForge

("theForge" is ABANA's Internet news group. Visit the ABANA website, http: www.ABANA.org, for information how to subscribe. - Ed.)

* * *

Question -- Smoothing the Hollows in a New Swage Block: Any thoughts on the best way to grind smooth some of these more difficult hollows in a new, sand-cast swage block, such as a 2" dish, spoon etc., without deforming and with the least amount of manual effort? - Don Plummer

Reply #1: Cut some right-sized (1/2" would be a good start) maple dowels to about 6" lengths. Round one end out (spin it against a sanding disk, grinder belt, etc.). Paint the hollow you want to smooth with lapping or grinding compound, chuck the dowel in an electric hand drill, and start polishing. Change dowels when you change grit. - Roy Wilson

Reply #2: I have smoothed out hollow places with a slap wheel sanding or sand-o-flex they fit in a drill or a Dremal and do a good job without changing their shape and then if you wont to go smooth, buff with a small wheel in the hand held drill - Ron Claiborne

* * *

Question -- Photographing Ironwork: I would like to know how [other smiths] go about photographing [their] work. The items I make [range in size] from "fits in your hand" to about 8 x 8 feet. How do you deal with back drop, lighting, and all the other issues concerning the photographing of your work? This has been vexing and disappointing, as the photos I take don't really communicate what I would like them to. I'm looking for solutions, barring having to hire a professional for every photo I would like to take. Please briefly describe your approach and process. Thank you. - Paul Emile Morneault

Reply #1: I have found that a plain white background works best. Try taking pictures at the noted settings of the camera and then and f stop above and below the settings. Also might play with the exposure time up one and down one. I have found that it takes about 5-6 pictures to get one that will do. - James Ellis

Reply #2: Successfully photographing iron is tricky and requires a few special techniques. First, there should be a white background that is not too close to the piece. An excellent and cheap backdrop is Tyvek, which is used to wrap houses. You can buy a mile of the stuff for nothing at any hardware store. [Tyvek is cheap per square foot, but you may have to buy a roll for $40 or more. White paper can be got in rolls from office supply stores for less money out of pocket. - Ed.] You can then use a large [aperture = small] F-stop to have a short depth of field and blur out the background.

Second, when determining the exposure, take the camera off of automatic and manually determine the F-stop of the specific piece that you're photographing. Forget the exposure setting for the backdrop. You are interested only in the light reflection off of the piece itself, not the background. Hold the camera close enough to the piece so that only the piece itself indicates on the exposure meter. Since most iron is fairly black, the F stop will be quite large, or, if you require a greater depth of field, you'll have a smaller F stop but more speed. Larger pieces generally require more depth of field. In any event, your exposure for the picture is determined exclusively by the piece itself regardless of the background.

You should also have a good light source. If you're shooting in black and white you're not concerned about the Kelvin temperature of the light so you don't have to be careful about matching the Kelvin temperature of the light to the film like you do with color. You can use two cheap halogen lights for the light source, one to either side of the piece. The object is to emphasize the texture of the piece by bringing out the shadows. Set up your lighting and then look at the piece critically to see if the lighting gives the effect that you want in your photograph. This controlled lighting will be much more dramatic and controlled than using a flash, which can create a glare on the object. It is almost impossible to put too much light on a piece of iron, it will absorb a tremendous amount of light and, after all, it is only the reflected light that will bounce back to your eye and to the film. But the object of lighting is to provide enough exposure as well as to emphasize the texture of the iron. A good fast professional-grade film with good resolution is important.

I find that ASA400 is adequate for publication-grade photographs. Depending on the intended use of the photo, a finer resolution film might be desirable. The lens is also critical. A macro lens is necessary to have the object fill the frame. Last, with the exception of some of the new, high-resolution digital cameras (such as the new Sony Mavica 91) most digital shots simply do not have the resolution necessary for good publication quality. And don't forget to use a good tripod. Snap! - Jerry Kagele, Editor, Hot Iron News, North West Blacksmith Association

Reply #3: I have a degree in Photojournalism and can speak to this topic. In college I was taught to photograph a variety of objects using simple props. Since you are shooting inanimate objects you can get by with cheap reflectors, the kind with spring clamps on them. You can get pretty good ones made by Smith Victor at Photo stores or use the silver ones from hardware stores. Try to get ones that can handle 150 watt bulbs. Light really makes the photo and you will be simulating what nature does.

To get an idea of what quality lighting is get up early and pick a subject outdoors. Watch what the light does to it as the sun travels across the sky on a cloudless day. You will find the early morning light which is mostly horizontal brings out the subject in stark relief. As the sun reaches its zenith the high-noon lighting flattens the light and throws harsh shadows where you don't want them. Toward evening the process repeats itself, though you have the haze of the day working against it. You can simulate this look by adjusting your studio lights accordingly. Keep in mind the light never comes from below the subject outdoors. For this reason avoid doing that inside -- we call this monster lighting and that is how Hollywood makes Frankenstein and the Count look so scary.

To compete your tool kit you need a piece of seamless backdrop. Get the biggest roll of paper you can find. I like black, white and neutral gray colors (We're talking B&W here, this color thing is just a fad.) you can also use a roll of the brown craft stuff which is real cheap. The roll needs to be suspended from the ceiling and move in a fluid curve across down and across the floor. Shouldn't have to tell you not to walk on it in dirty shoes. Other options include sheets or just large pieces of fabric, the key being to make the background seamless.

Experiment with the lights in a darkened room. Traditional portrait lighting involves one light high and 45 degrees to the side of the subject. You see this a lot in the work of the old masters -- it forms a triangle on the cheek opposite the subject. This applies well to ironwork too. This light is your main light -- you need a second light right next to the camera pointing at the subject. This is strictly a fill light and should be half the intensity of the main light for a nice 2 to 1 ratio. You get this ratio [either] by moving it farther from the subject (light falls off with the square of the distance) or by using a lower wattage bulb (best if distance is a problem). These lights can be strobes too though it will be difficult to tell what you will get without a real light. You can vary the power of a strobe by covering it with a folded handkerchief.

Another good set up is side-lighting, very effective with ironwork as the directional light source picks up the texture of the iron nicely. To do this the light is the same height as the camera but 90 degrees away from the camera. Again a fill light is used as above (or not, just play with the light and see how it looks).

It is even possible to back-light the work somewhat, but be careful not to let light spill into the camera lens or it will flare. When you do this don't use a zoom lens -- they have too many lens elements.

If you use cheap lights you will have to use slow shutter speeds to get the maximum depth of field but that shouldn't matter with the camera on a tripod.

I mentioned a third light -- this can be extremely useful. Hide the third light behind the work or a prop if possible and point it at the background. You will need a wide reflector to get the light to spread out as much as possible. The idea is to blow out the background, possible even with a black background. Check the exposure you get with each light by itself and again with all the lights on. You want to expose for the main light. Let's say you get F:11 for the main light. Adjust your fill light for F: 5.6. Your background light should meter around F: 22. It's hard to get this right. I have a flash meter and Broncolor light boxes with two intensity settings and it's still hard...

Using bare bulbs in reflectors will give you some really harsh light which is desirable sometimes. If your work is shiny (stainless) or has glass in it you will need a soft box, you can make this with PVC pipe covered with Velum paper like the draftsmen use. You shine the light through the paper. It's amazing the soft light you can get with this technique.

For ultra shiny surfaces (like glass or mirrors) I learned to light strips of paper hanging to the side of the subject instead of the subject itself -- really tricky. Start noticing product photography in advertisements -- this will help you figure where to put the lights.

Some other ideas: Large objects can be taken outside or even on location. Try to take them to the top of a hill so you can frame them against the sky. You will find this makes for a backlit scene that will fool your light meter. Fill flash helps a lot.

If you can't eliminate the background try shooting at night using a flash. The light will fall off just past the railing and the background will be lost in shadow. If you get lucky as Bob Bergman did with his Crane Gates you might find the subject surrounded by new fallen snow.

The main thing to remember is to get the lights off your camera as this makes pretty boring light. When I have to shoot with a flash on camera I bounce the light off a white card attached to the flash with a rubber band and the flash head at a 45 degree angle.

For more information get Charles Lewton Brain's "Small Scale Photography" (book and video) available from Brain Press, Box 1624, Station M, Calgary, Alberta, Canada T2P 2L7 or email to brainnet@cadvision.com. - Jim McCarty, Editor, The Anvil's Ring and BAM Newsletter

* * *

Question -- Slitting and Drifting: I have been trying to slit open a hole in a 1/2 inch bar, your know 1/2 hole in a 1/2 inch bar. Well I made my slitting chisel using the chart in Whitaker's cookbook, everything worked out fine. The trouble I'm having is when I make the slit, the mass of the metal is being punched down, thus when I finish I have a 1/2 inch in a 1/2 inch bar but the area has a cone effect, the outside of the circle, inside okay, since I drifted the hole. I think, haven't tried it, if I slit from one side then the other it may reduce the swelling but I guess I'm not sure. The chisel I made is sharp, so it's not the dullness of the chisel dragging material down, any ideas? - J. Elliot

Reply #1: I used to have the same problem until I started visiting Nahum Hersom. He has a can full of slitting chisels that he made from bearing race steel. They are very thin in cross section, and the blade edge curves right around on both edges so that the cutting edge cuts the sides as well as the front as it passes through the steel. I quickly made some too, and they work wonderfully well. I use them for slitting the hole to be drifted out for the eyes of repousse hammers. They easily slit cleanly through a railroad spike with very little of the drag down and deformation you are having. Also I slit from both sides and meet in the middle. The shape of the tool is very important in the slitting process I have discovered. Also, it helps to keep the iron really hot. The thickest part of the chisel is no more, probably less, than 1/4" thick, and it tapers to the edges which are about 1/8", or less, thick on each side. Nahum's are not ribbed like mine, but are just hammered out into flat thin bars with a similar edge as mine. His can't be more than 3/16" thick, if that. - Ron Reil

Reply #2: A common cause of the stock being drug down into the hole is using too light of a hammer and or blows. Put the chisel where you want it, make a mark,

confirm the position is where you want it and whack it hard. George Dixon wrote an interesting piece on chisel shape that seems to agree with Ron's description of Nahum's design of chisel form and function. - Kevin Donahoe

Reply #3: We are slitting and drifting a bunch of 1/2" holes in 1 1/4" X 5/8" stock, for our screen workshop this week. There are a few things to do.

1. Have a thin *sharp* chisel of the blade width as in Francis Whitaker's' book. .700" I think.

2. Mark the center of where the hole will be. If there will be multiple holes in one bar you must account for shrinkage. Make a test piece and figure how much you will lose. You'll lose half the amount for each side of the hole. Today I was losing 1/4", so our layout is offset by 1/8" (half for the one side) This is *per hole*, so the 2nd hole is offset by 1/4" the 3rd by 3/4" etc. *Make a test piece.* Another person there was only shrinking by 1/8" per hole. Each person is a little different, but be consistent. What you do to one hole, do to all the others

3. Mark the limits of the slit (.35" to each side of the center punch), do this on both sides of the bar.

4. Slit the bar at a bright orange to yellow heat. Cut 1/4 of the way through from one side, and repeat on the other side. Repeat until you cut through the bar. (You don't need to drive the slitter clean through the bar, just enough to get a small hole.

5. Take a good yellow heat and cool the areas on either side of the hole, then upset by hammering on the end of the bar. This causes the sides of the hole to swell out and up. You should now have a hole that looks like a football.

6. Take another yellow heat and drive the drift about 1/4 of the way through, remove it flip over the bar and do it from that side.

7. Repeat step 5.

8. Repeat step 6 until you drive the drift on through. Depending on the size of the material you can reduce the number of heats. But driving through from both sides in combo with the upsetting will help stop the "bellywash" or coning of the hole. -- Mike Linn

Burning down Buildings for the Nails

by Jim Sorber

Grover Richardson posted (to "theForge" - the ABANA news group) that there was one northern state that passed a law where people could not burn down their houses when they moved because of the value of the nails. I knew I had a document on this subject and it took me some time to find it... but here it is. This one, however, says they *could* burn down the Court House to get the nails. What is interesting is how early this was written -- 1691.

"Att a Court of Quarter Sessions hold for the County of Kent by those of majority authority and in the proprietarys memo of the 10th, 11th, 12th, 13th and 14th days of the first month 1691 going in the third yeare of the raigne of William and Mary King and Queen of England and 11th of the proprietarys government.

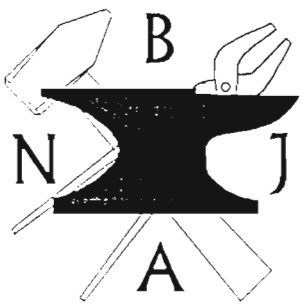
"The debate about settling of the courthouse is to be decided by the 28th of the 2nd month next att the house of William Berry to which time and place the court doth order of sherriff to make proclamation they doe adjourne

"County of Kent (Delaware) 28th day of the second month 1691.

"Whereas it was agreed upon and ordered at the last quarterly sessions of the first month last that the settling of the court house should be decided this day by vote of the freemen inhabitants of this County and we under written being mett this day according to the said order of Court doe unanimously agree and conclude as follo:

"That 50 acres of land shall be purchased of William Morton and a court house built and the court shall be kept for the future of those and that the purchase money to do so be levyed on the public and also for the building of a court house and prison and the said land and houses remain for the publick use of the County.

"Whounder we have set our hands the day and yeare above. And wee do alsoe consent that the old Court house may be burnt to gett the nailes."



ABANA 2000 Chain Project: Linking Blacksmiths Everywhere

Every member of every ABANA chapter is invited to forge a chain link to be assembled into one ABANA chain linking us all together. The resulting chain will be on display during Conference 2000 and sold at the auction.

Start with 3/8 round stock seven inches long, form an oval link and forge weld. You may jazz the link up any way you like, just remember to leave room at the ends of the link for the adjoining links. Don't forget to put your touch mark on your link or use letter stamps. A tag or some other means of identifying your chapter would also be good.

If you need help forge welding or if you don't have the equipment you need, contact any of your club's officers. They will all be more than happy to help get whatever you need. The deadline for submitting a link will be June 1st, 2000. Please don't wait until then to send your link. We have to have time to get them all put together before the conference starts. The sooner you send a link to us, the better. Send completed links to: Saltfork Craftsmen ABA, 1227 4th St., Alva, OK 73717. - Mike George

The Scrap Corner *(A place of repose for bits and pieces that may someday be of use.)*

- Here is a hint for more efficiently upsetting the end of bar stock, round or square. When up to heat, start with the end of the bar near the far edge of the anvil and, with back-up blows, make a 45° chamfer all around the bar end, equal to about one-third the cross-section of the bar. If you have enough heat left, proceed to upset in the usual manner, on a floor block or the anvil. The efficiency comes from the upsetting blows being delivered to the smaller cross-section, and upsetting that into the bar. Another advantage is to prevent excessive mushrooming that can cause unwanted cold shuts. Do not neglect to true up any distortion or buckles before the next upsetting cycle, otherwise you will only gain in distortion and little in upset. Distortion can quickly get out of hand. -- Tim Suter

- To prevent the ravages of welding flux on your gas forge floor, us a piece of 16- or 18-gauge stainless steel, cut to fit, to cover the floor when welding. You can set it aside when not needed. -- Tim Suter

- I want to share a ridiculously easy black iron finish for indoor decorative pieces. this treatment is not messy or smelly like oil and bee's wax on hot iron, nor does it have the artificial full cover of black paint, although I do acknowledge that these finishes have their place. Naturally, any piece should be thoroughly brushed clean of scale and any loose stuff. Now just apply a generous coat of (don't laugh) black scuff coat liquid shoe polish. Use a brush to get it into areas that can't be gotten to with the applicator cap. Apply a generous coat of a good clear paste wax, and buff up with a soft cloth. That's it. You will have a piece with a pleasing sheen and color nuance from steel gray to jet black. I use a heat gun to melt the paste wax into the nooks and crannies around joinery and crease. -- Tim Suter

- Finding (or making up) leather belts for old forge drives, etc., can be a real pain. Some years back I bought a huge roll (hundreds of feet!) of "flexible fencing" stock for my horse. (For nonhorsemen here: this is a rubber synthetic fiber compound that is available in many widths from about one inch up to maybe 8 or 10 inches wide, I guess. It is for horse corrals, where it is used to afford safety to horses, as [it has] no splinters to wound them, etc., etc.). This stuff was just right to replace the belt on my old Buffalo Forge! It laces or staples butt-ended just like leather, looks just like real leather hide belt (for the purists) and will outwear and outrun leather 10 to 1! Also - it withstands heat better than leather, too, where it runs close to the firepot...

Where you will go nuts finding, skivving, cutting, fitting, and putting together the leather for long belts on old equipment, this stuff will give you a new belt every week if you want - for pennies per foot! (Check any horse supply source in your neighborhood or fence place or contractor). -Anvilbangr (Old Griz)

Letters to the Editor

Dear Editor

I want to thank you for sending me a copy of your newsletter. Your article describing my demonstration is clear and well-written. I am very flattered and I thank you again. I hope you have a great holiday season. Please stop in to see me if you are in Phoenix.

Sincerely,

Peter Sevin, Phoenix, AZ

Dear Editor,

The [December] newsletter ... is excellent! I really like the little tidbits of info that I can use here and there. I was really glad to see the write up of Pete Sevins demo, because I was wanting to recreate that someday. Thanks again for all your hard work.

Bill Futer, Glassboro, NJ

Eye Safety -- Two Object Lessons

Object Lesson #1. This was one of those days. Merrily hammering away, turning old, used horseshoes into letter openers and hoof picks. I was getting tired along about 4 o'clock. Figured; "what the heck I can do a few more."

Nigh about the last one. I was beating the heck out of a horseshoe when I saw a bright red flash in my left eye, felt a rap on my glasses, and proceeded to duck wildly--and too late. Yep, got in a hurry, turned the piece without making sure I still had it firmly in the tongs, hit it anyway, and flipped it up off the old Mousehole and right at my face.

Now I know why I always buy prescription safety eyeglasses and keep the side shields on. That was close. Now to find out if Pearle Vision's no-scratch (No burn?) guarantee is as good as they say it is. If it isn't, the glasses were *still* darn cheap. Second time in my working life a pair of glasses saved me. - John Husvar

Object Lesson #2. Okay, all, let this stand as a warning about eye protection. I was turning a pommel for a rapier this afternoon, and I was just sorta looking *over* my safety glasses at what I was doing and, sure as the sun rising in the east, I got a red-hot piece of steel right in the corner of my right eye. Needless to say, after *a lot* of cussing, stomping and other unpleasantries, I got the piece out and now I have a nice second degree burn on my eye lid. Thank the Good Lord (insert name of favorite Deity here) that it *didn't* get into the eye, just sorta cooked the eye lid.. Needless to say, please -- all of you hammer heads out there -- *wear eye protection properly*. I was lax. I did this 100 times before and, well, this was a warning. It could of been *a lot worse!* We are in a very **hazardous** craft as it were, and we only have two eyes...and eyes are important -- just ask someone who has *one*. I felt relieved and rather stupid about this after I had a chance to wash it out and look close. But this is something that needs to be said. Safety, when taken for granted often comes back and bites you in your arse. - Jim Hrisoulas.

Some Thoughts on Working with the Customer

When working with the customer, recognize that they are probably insecure in not really knowing what good metalwork should cost, as this is not generally common knowledge. Be their friend and work with them in understanding what it is you are offering. Just put your self in their shoes. Try remembering when you knew nothing about blacksmithing and wrought iron. This is probably similar to the perceptions your customer has. Treat the customer the same way you would like to be treated.

Take the time to discuss what wrought iron is, where the black comes from (it is not black paint), show them examples of your work, work in progress, etc., etc., all the while watching the nonverbal clues as to what really interests them. Find out what they really like. People have different ideas of what wrought iron is. Involve the customer in the design and decision making process (if they are so inclined). Give them the feeling that they have invested something other than money. Communicate that the piece you are creating for them is specifically made for them, "one of a kind" if you will. Very important!! Be completely honest with your customer, it always pays off. Focus on pleasing the customer, and everything will workout well. Listen to what they are saying!!!!

Put prices on your examples. Otherwise the customer will think that you fabricate a price for each customer based on your perception of their financial means. You don't have to give a price right away on an involved project, or one with many details, if the customer asks what it is going to cost. Get their information and tell them you will call them with the price. Every day I thank god for having the opportunity to create nice things for people who have an appreciation.

This is an area that is seldom addressed in smithing organizations. It is key to our survival, as important as the anvil. Feed the customer and they will return. They have gone out of their way to find you and come to see you. The least you can do is to reward them. If the phone rings while they are visiting, let the machine pick it up. Focus 100% on the customer in your shop. If other customers walk in acknowledge them, (you can give the second customer something to do while they are waiting like look at your portfolio) then continue your focus on the first customer. All the customers will appreciate your undivided attention.

Return all your messages. If the customer asks you to do a little something for them, go out of your way to please them. The norm for customer service today is really quite sad. If you make an effort to stand out in your service alone, you will see the results within a short period of time. Just think how you would like to be treated when you go to a store, and just do the same. Remember the golden rule, treat others as you would like to be treated. What goes around comes around. Give and you will receive.

What most people want when they come to have something made by a blacksmith is so much more than a piece of metalwork. It's the feelings they expect to come away with when they find an old time craftsman plying his craft. These perceptions of a blacksmith are very important tools which we can use in satisfying the customers needs. And the final product is so much more than the piece of metal work in their homes. It's the memories the customers has of the process of having this piece crated for them by the "blacksmith".

Always try to exceed the expectations of your customer. Think of their visit as a process, from the time they hear about you all the way until the finished piece is in their home. Present examples of the nice work in a context similar to their homes so they can appreciate it. With plenty of examples of the possibilities in metalwork. Do it right, and your work will sell itself.

To give you an idea, my only advertising is a little blip in the yellow pages. My location is off the beaten path. About 90% of my business comes from word of mouth and repeat business. At present I have at least four months of work ahead of me. Not to mention the prospective work I would like to do.

Paul Emile Morneault

Unclassified Ads

For Sale: Old Prentice Brothers Metal Lathe; graceful castings, 84" between centers, 10' overall. 8" swing, with single phase motor, all pulleys and gears; auto feed, 4 jaw chuck, tailstock, compound and crosslide. Sitting on a trailer waiting for you!!! $475. Trades considered. Contact Bill Ker, (732) 223-4188.

NJBA Advertising Policy

Rates for Photocopy-Ready Advertisements

Photocopy-ready advertisements must not contain photographs, solid black backgrounds, etc., and NJBA cannot be responsible if submitted copy does not reproduce well when photocopied. Send all copy to Bruce Freeman. (See NJBA Directors List.)

Size	Measurements (W x H, less margins)	Price
full page	7" x 9"	$50
half page, vertical	3.4" 9"	30
half page, horizontal	7" x 4.4"	30
quarter page	3.4" x 4.4"	20
business card	3.3" x 2" overall	10
bus. card (NJBA members)	"	5

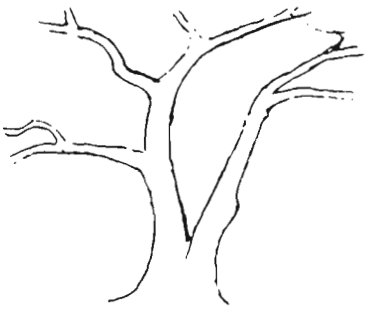
Rate for Unclassified Advertisements

Unclassified advertisements must be legible, preferably typed double-spaced, text only. Electronic copy is appreciated.

Type and Size of Ad	Price
12 lines (about 100 words)	$15
6 lines (about 50 words)	10
NJBA members, 12 lines.	5
NJBA members, 6 lines max.	free

Forge A Tree

Ian Walker



The tree was an afterthought. I needed something to fill a ring project in a Haystack Craft School blacksmith course - a project similar to the ABANA ring project. Gnarled white oaks are common on Deer Isle, so during a lunch break I filled several pages of my notebook with sketches and headed back to the shop to forge a tree to fit the ring. When I put the finished tree ring in the session-end auction to help raise scholarship money for Haystack, my wife Diane hinted she'd like a tree.

Asked to contribute a piece for another fund-raising auction, I designed a small (19" x 6 ½") elliptical cherry wall shelf with a mild-steel oak tree (16" W x 9 ½" H). I used a sketch from my Haystack sketches for the basic shape (above right).

Because the final shape and size of the tree needed to fit the wall shelf, plannning and layout were critical, though not difficult.

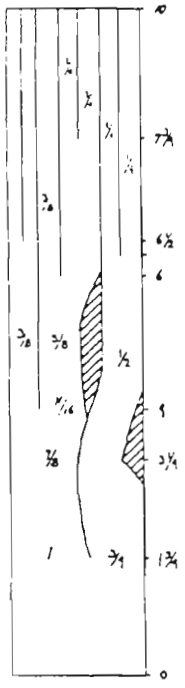
Figuring what stock to use was fairly easy in that I was splitting the trunk(s) and branches from one piece of steel. From my sketch to scale, I determined the maximum total trunk width was 1¾", spread to 2½" wide at the base. I measured the width of all the branches and the height of the branch crotches. Those measurements (see below left) were drawn on paper which I glued to a piece of 2" x ¼" bar. Two-inch-wide bar is a standard size, and I reasoned there would be steel losses as I cut and forged the tree.

Using a chisel and working cold under the treadle hammer, I marked all the lines and then heated the bar and split it to all the crotches. Working from the base, I shaped the trunk and lowest branch, and then worked up the trunk and subsequent branches. It is important that the trunk and branches diminish in size from crotch to crotch. The branches were drawn out and rounded as I worked. I tapered the width of the trunks hot with a rasp to avoid distortion that would result from drawing them out on the anvil.

I brought life to the tree in three ways: (1) the lower trunk was fullered in a stump to give it thickness (½") where it joins the shelf, (2) the branches are rounded, and (3) the branches bend as much as 7/8" away from the plane of the wall. For safety, the pointed branch ends are bent to touch or come close to the wall.

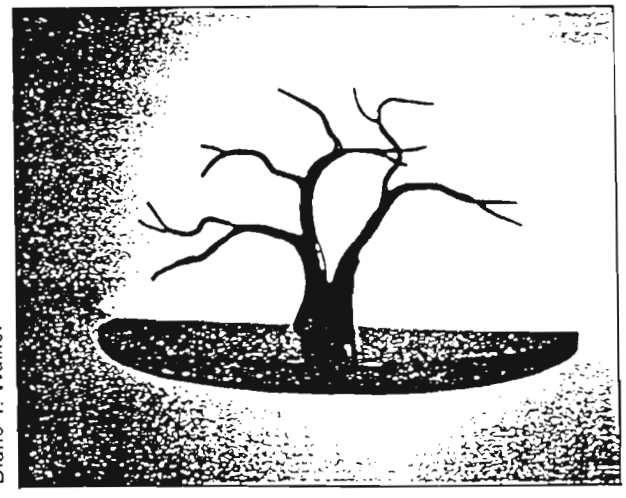
There is a hanging slot behind the trunk for hanging the shelf on a screw. A hole in a tab beneath the shelf accepts a second screw to level and secure the shelf to the wall.

Diane went to the auction determined to bring the tree shelf home, and she did.



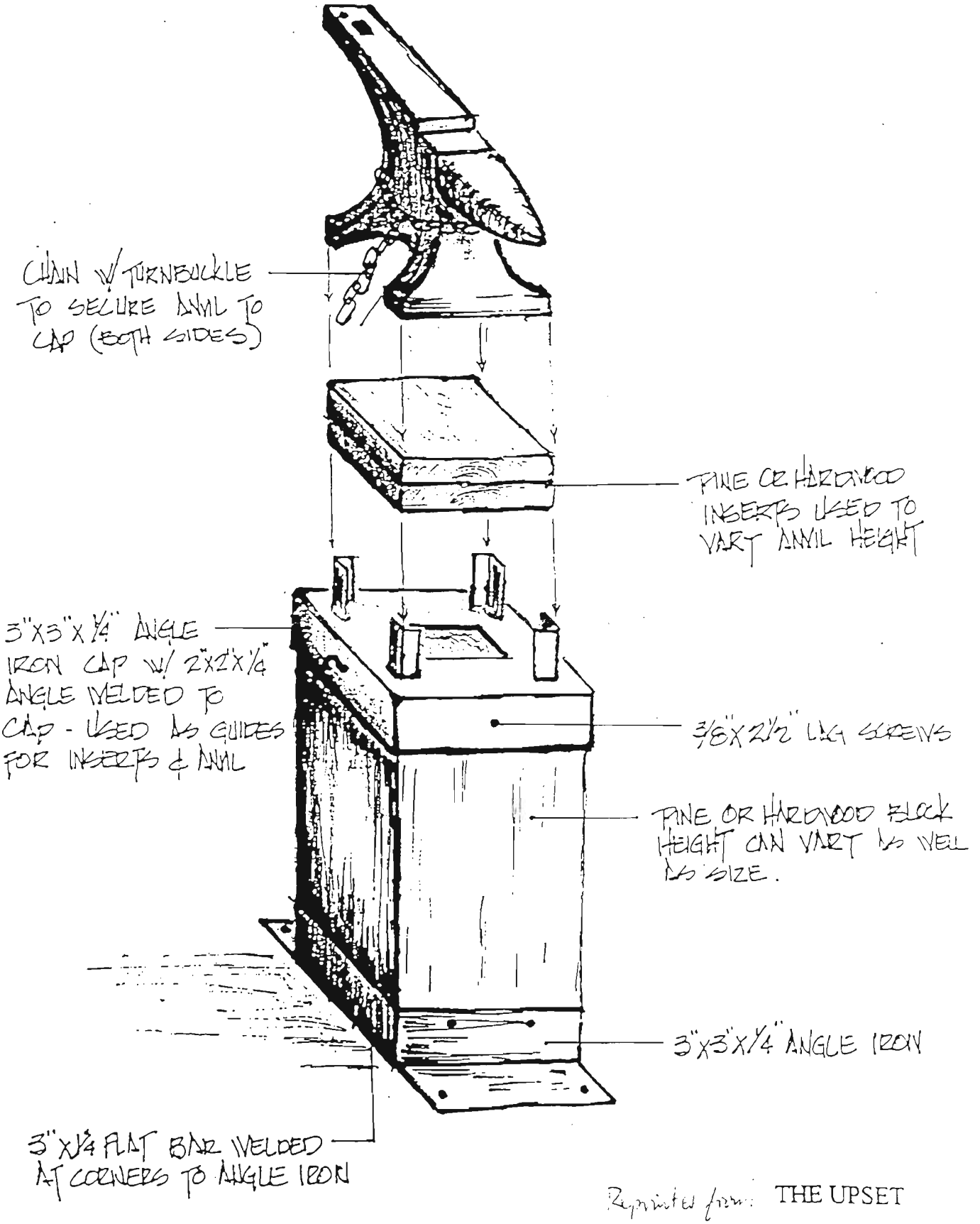
Sketch at left. Layout on bar prior to splitting for trunks and main branches.

Photo at right. Completed wall shelf. Mild steel and cherry. Tree is 9 1/2 inches high. Elliptical shelf is 19 inches wide and 6 1/2 inches deep.



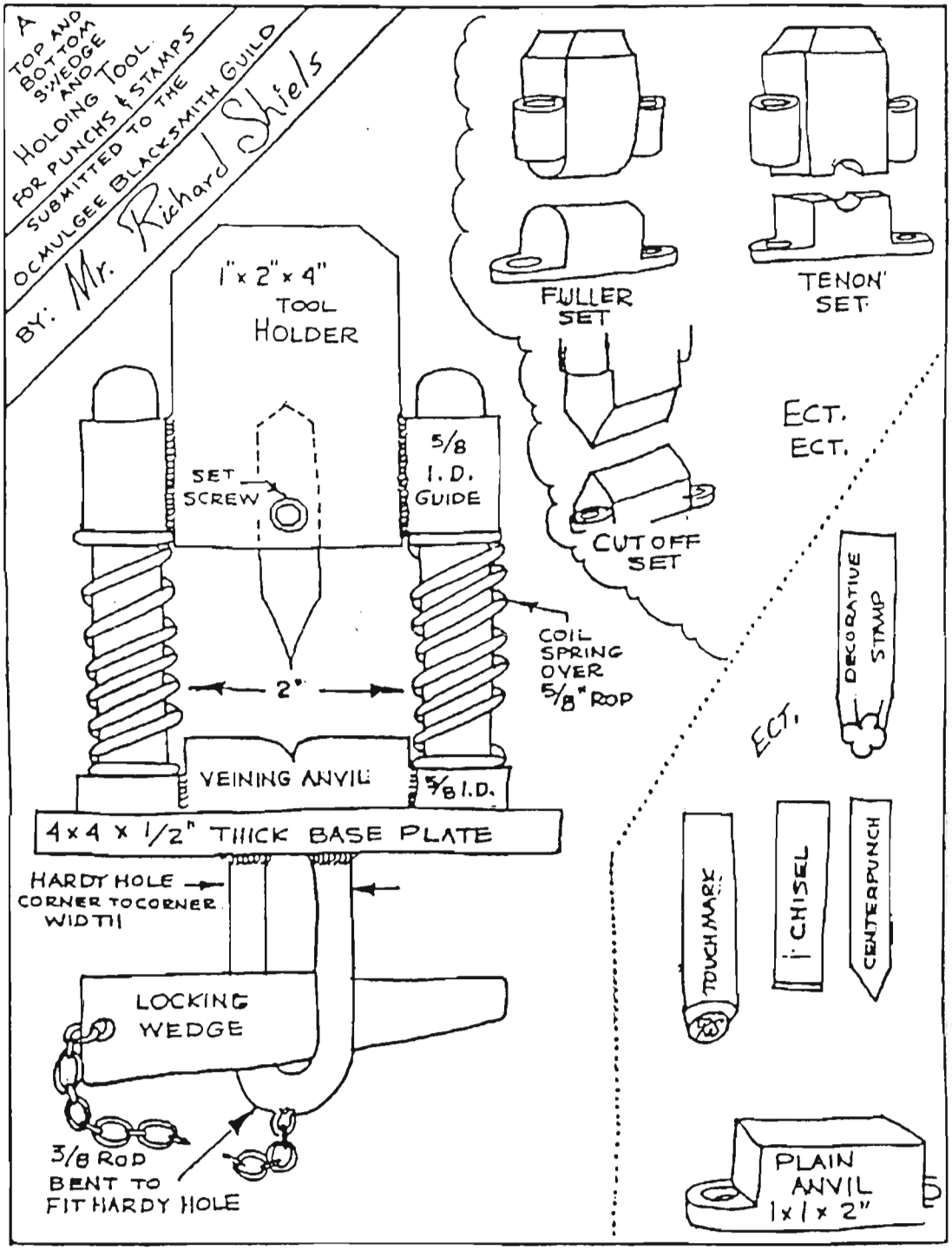
Diane T. Walker

Reprinted from: Newsletter of the New England Blacksmiths



Reprinted from: THE UPSET

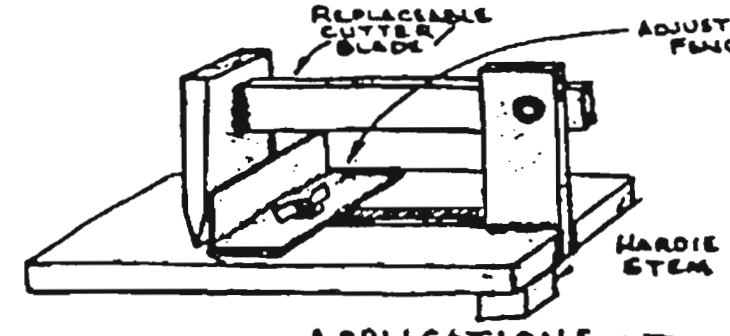
Swage/Fuller/Holder

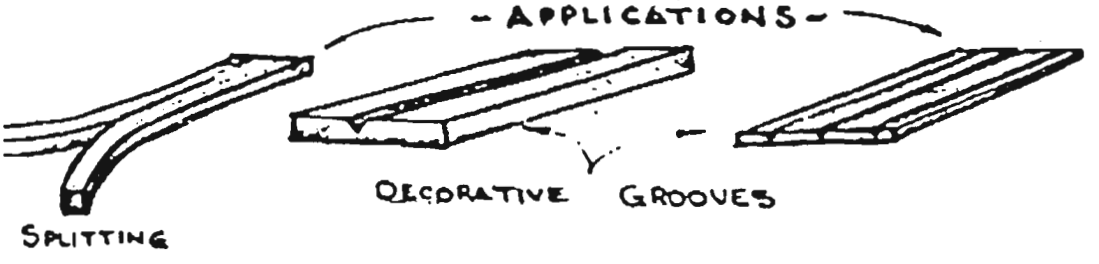


Reprinted from the Ocmulgee Blacksmith's newsletter #20 May 94

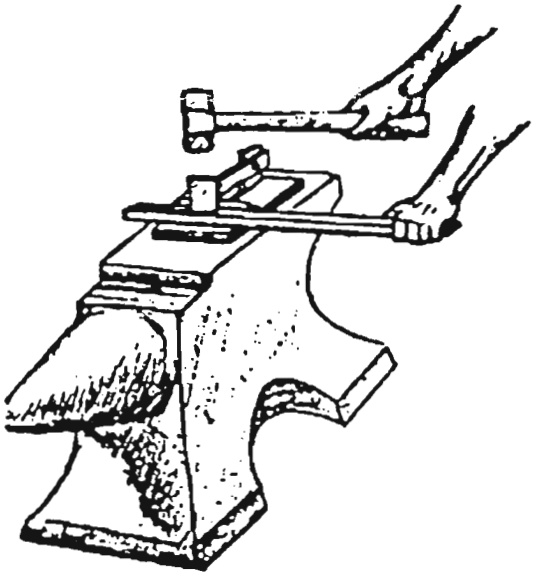
ADJUSTABLE SPLITTER

EJF 12/88





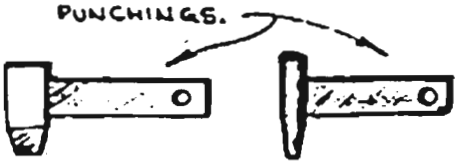
The Florida Clinker Breaker, April, 1989



THE ADJUSTABLE SPLITTER IS A TOOL THAT HELPS IN MAKING FAST AND UNIFORM GROOVES AND SPLITS

THE ADJUSTABLE FENCE KEEPS A CONSTANT DISTANCE FROM THE BLADE MAKING IT EASY TO SPLIT A LONGER SECTION IN ONE HEAT SINCE NO TIME IS SPENT ALIGNING THE BLADE.

A VARIETY OF REPLACEABLE BLADES CAN BE MADE FOR DIFFERENT STAMPINGS/ PUNCHINGS.



Joe Jamis
December, 1988

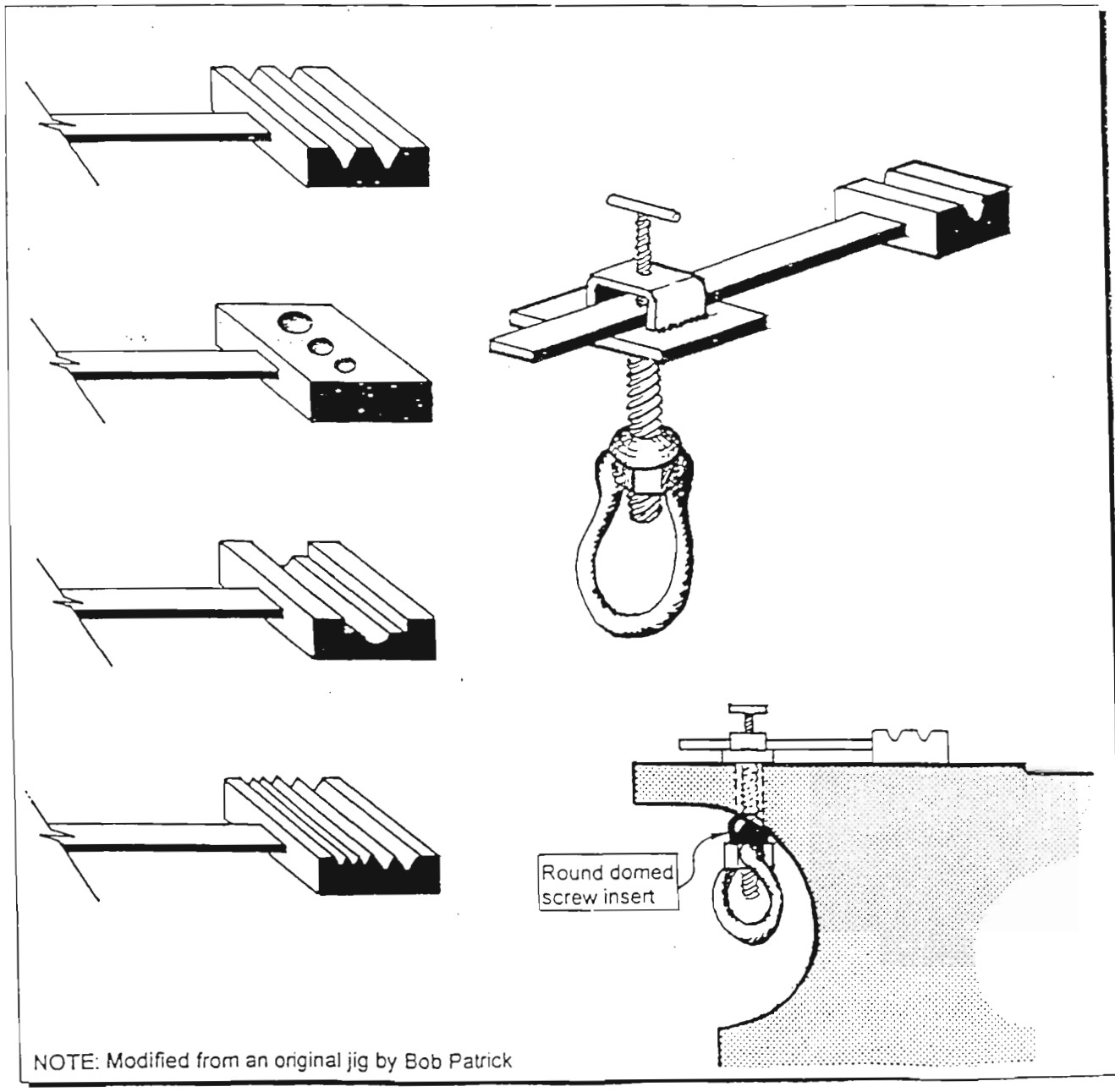
P.S. I have not yet made one of these rigs but saw Bill Hickman selling one at the '87 Madison Conference. I've needed one ever since.

Joe Jamis 2/13/89

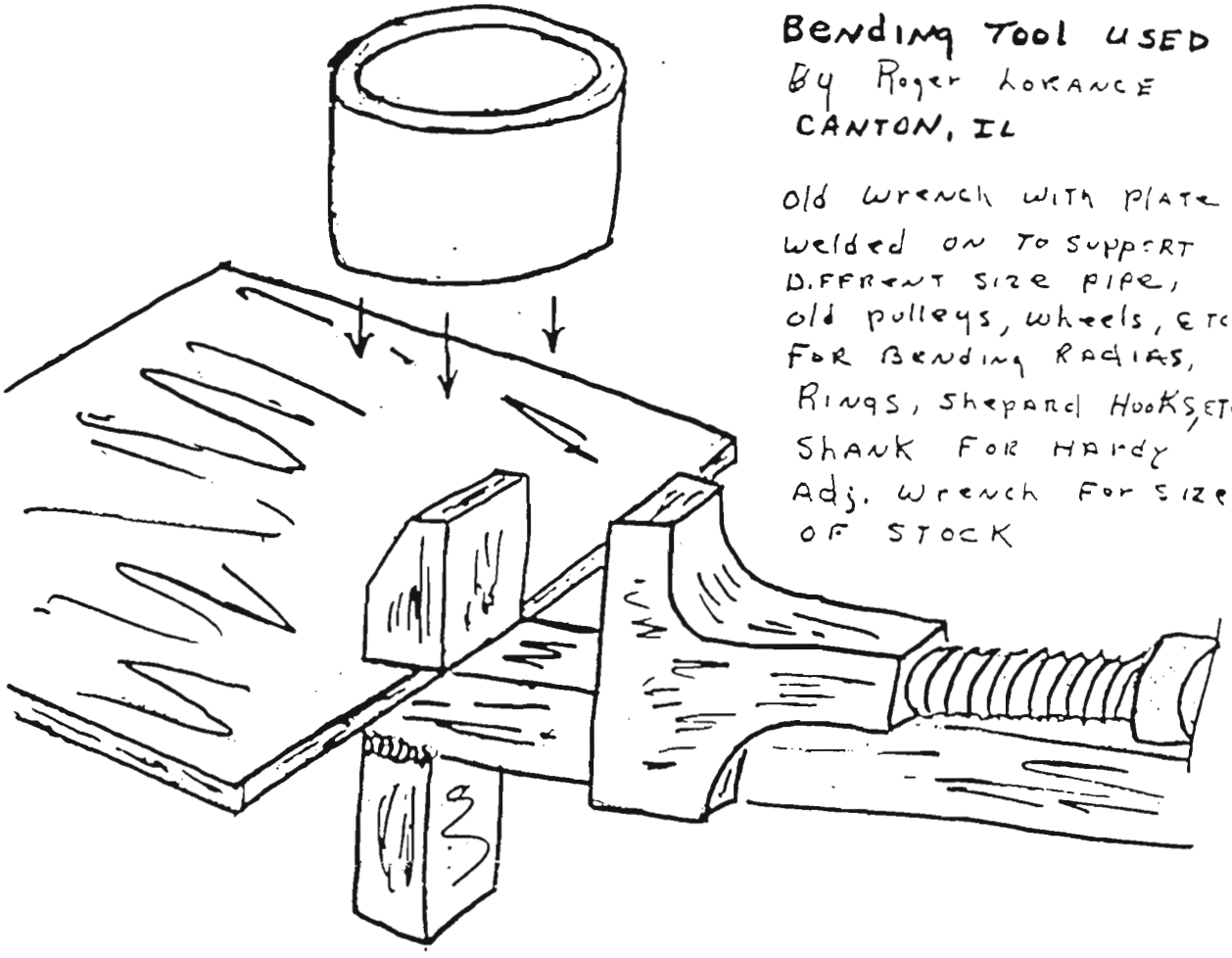
MISSISSIPPI FORGE COUNCIL

Multi-purpose Jig 5/28/98

Objective & Scope: Develop a jig that holds bottom tools that can have multiple use on the anvil, treadle hammer and power hammer. This jig is used in the hardy hole of the anvil or the hardy hole clamped to a power hammer (see *Hammer's Blow* - Vol. 6 #1, pg 16). It eliminates the need for tenons on bottom swages and provides a handle for use under the treadle hammer. One key point to the jig is the round domed screw insert that locks the tool in place under the hardy hole on the anvil or power hammer. Under the anvil, the hardy hole moves through a curved surface and a square plate or nut will not allow the jig to rest level. Drawings are generic and sizes and dimensions may vary according to your needs.



NOTE: Modified from an original jig by Bob Patrick

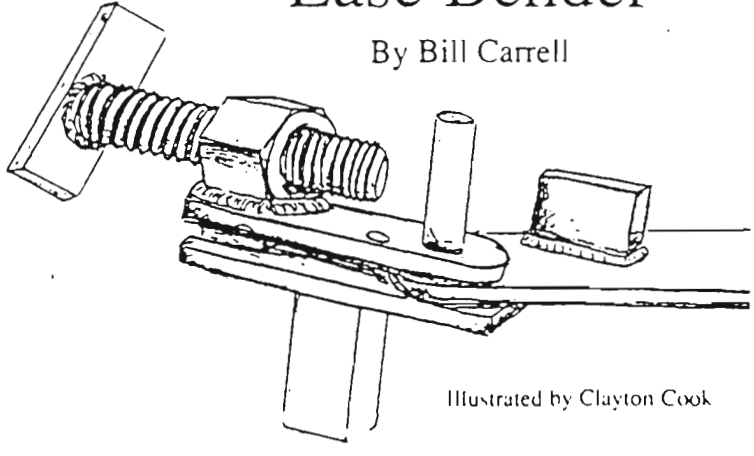


Bending Tool used
By Roger Lorance
CANTON, IL

old wrench with plate welded on to support different size pipe, old pulleys, wheels, etc for bending radias, rings, shepard hooks, etc shank for hardy adj. wrench for size of stock

Ease Bender

By Bill Carrell



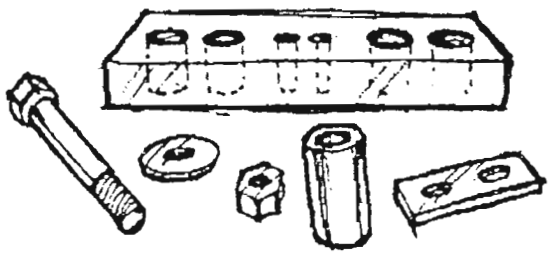
Illustrated by Clayton Cook

You oughta try this. I made one 40 years ago. It's about worn out. It's easy to build, can be made any size and is quick in and out of the vice, makes an accurate bend in hot or cold iron and takes up less room than a Hossfeld.

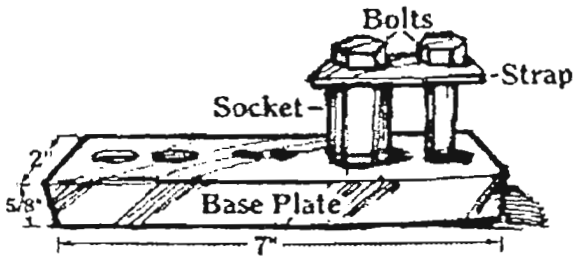
Reprinted from **NorthWest Blacksmith Association**

A Simple Bending Jig

A simple bending jig may be assembled with common materials. The capacity would be determined by the strength of materials and user.



A thick steel plate and large bolts will handle heavier bending. However, a plywood base may be used for lighter bends. The steel plate base is easily assembled if the holes are threaded. But bolts and nuts will also work if held top and bottom through drilled holes in the plate. Various sized sockets from a socket wrench set adjust the radius of the bend. A metal strap may be used to hold the socket in place, and to help keep the bolts from twisting. Smooth bolts and sockets are preferable to threaded rods for the threads will damage the work piece. This type of jig can be held in a vise, or bolted to a work table. A large flat surface around it can help keep the bends flat.

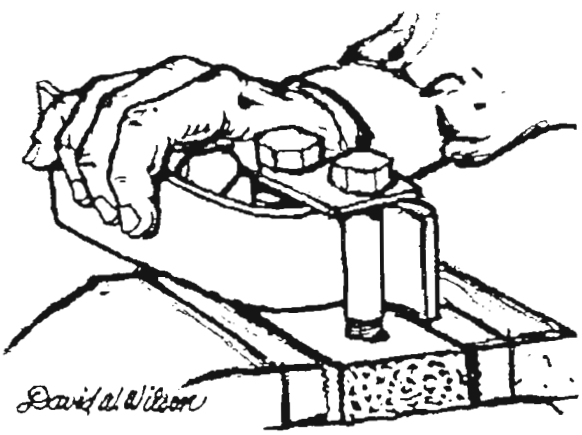


The distance for the work piece between the bolts and/or socket should be snug to keep it from slipping. Several holes drilled into the base at various distances facilitate making numerous radius bends.

"S" type bends are easily bent with this jig. A long rod will help give leverage for several S's. They may be bent by: 1. Inserting the end of the rod and bending the top part of the "S" 2. Work this bend back through the jig reversed, then bend the bottom of the "S". Cut hook from section of rod, repeat. Scrolls are also easily bent by gradually working the work piece around a bolt or socket. For repeated work, it's best to match it to a master shape.

David W. Wilson

From the North Texas Blacksmiths Association



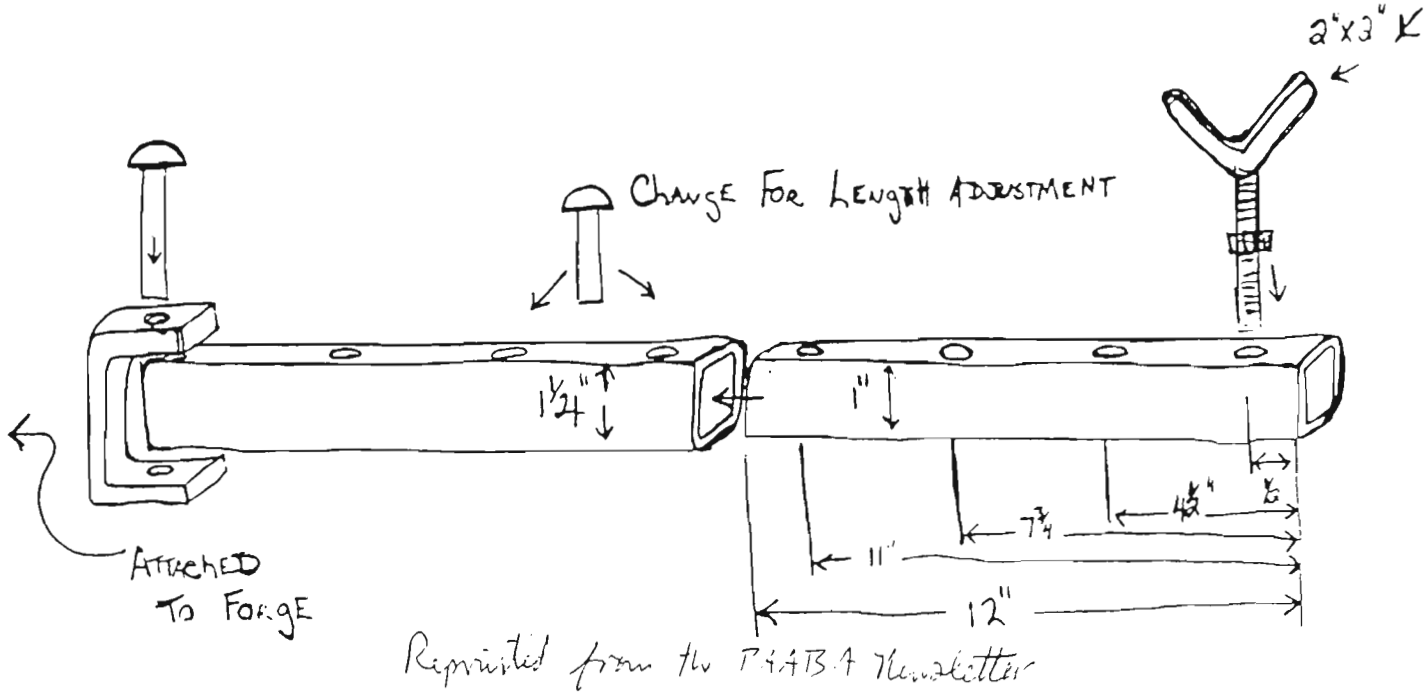
LESTER SIX'S
BLACKSMITHS HELPER

Lester Six hosted our February Hammer-In last year and as can be expected ,he had developed a new tool for his shop. Many of you who have been to Lester's have seen both his treadle hammer and the air hammer he's built. Plus over the years, Lester has developed other items, many which have appeared in the newsletter. His latest is a post vise which he's welded on the front portion of an anvil. At the February meeting, we saw the two arms Lester had made that are attached to the front of his forge. These two arms offer a place to support long material being forged. The arms can be adjusted into countless positions. Below is a sketch of one of the arms.

Cut material to size, drill holes in both sizes of tubing to match up with each other. The smaller tubing should easlily slide into the other.The one pin can be moved to adjust the length of the arm either farther away or closer to the forge. Make two arms and position them on front of forge either by welding or bolting.

Material List for one arm:

1 piece 1 1/4" tubing
1 piece 1" tubing
1 piece 2" x 2" angle (Just a small cut off)
1 3/8" all thread rod and nut
2 pins or bolts to use as pins
1 1/2" x 6" piece forged to shape for bracket.



Reprinted from the PABA Newsletter

A LEAF SPRING "HACK"

By Ocmulgee Blacksmith Guild Member
Tim Reynolds of Forsyth, Georgia

Here is a relatively easily made tool that is of great use in any smithy. Tim demonstrated it's manufacture at the November meeting. *(A hack is typically used as a cut off tool placed on hot iron and struck along its upper or back side to drive the tool through the metal thus cutting part of the metal off. They are especially handy for use with power or treadle hammers, but can be used with hand hammers as well. Alternately it can be used to mark metal with decorative lines by driving it just partially into the metal. Variations of the tool can include fuller type tools, set hammer type tools for stepping down the thickness of a portion of the metal, etc.)*

Tim started by taking a piece of truck leaf spring (which are usually 5160 or similar tool steel) and cutting off a section about 6 inches long.

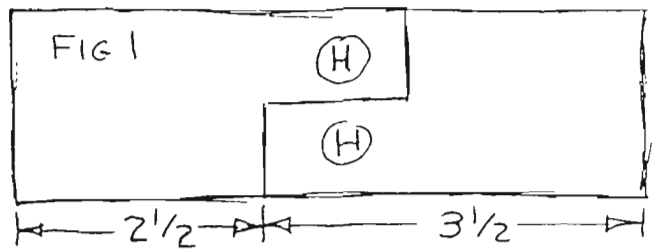
Mark the piece as shown in figure 1 at right and cut it into two pieces to form a pair of hack blanks. This can be done with a torch or with a hot cut chisel.

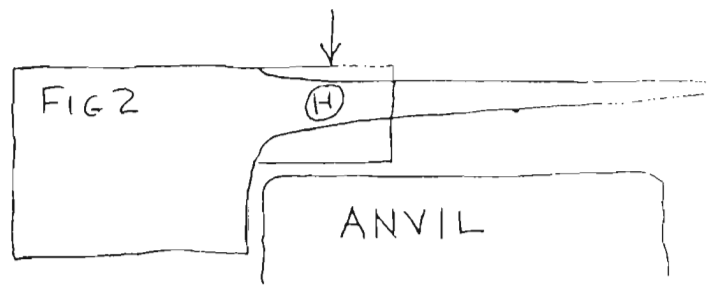
Draw the handle section (H) out into a long tapered spike as in figure 2. (Tim drives a standard wooden file handle onto the spike to complete the tool after it is sharpened and heat treated.)

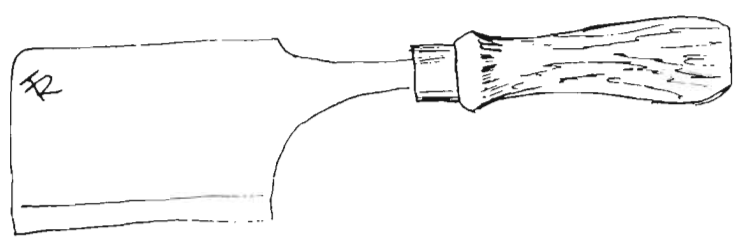
Grind the lower or cutting edge to a "V" or chisel type edge (or whatever else you desire).

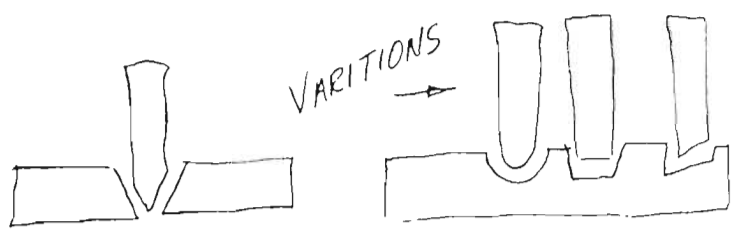
Heat treat the tool by taking it to a "sunrise red" color and quickly cooling in a container of oil. Polish the tool with sandpaper in order to observe the color changes as the top or back edge is "tempered" (softened) so that it will not be brittle and break in use. With a torch or a heated block of steel applied to the back edge, observe the metal as changes from silver through bronze, then purple, then blue. When the cutting edge turns bronze, immediately cool the tool in the oil. This should give a soft back (to stand up to the hammer without breaking)-and a hard edge (to perform the cutting or shaping it was designed for).

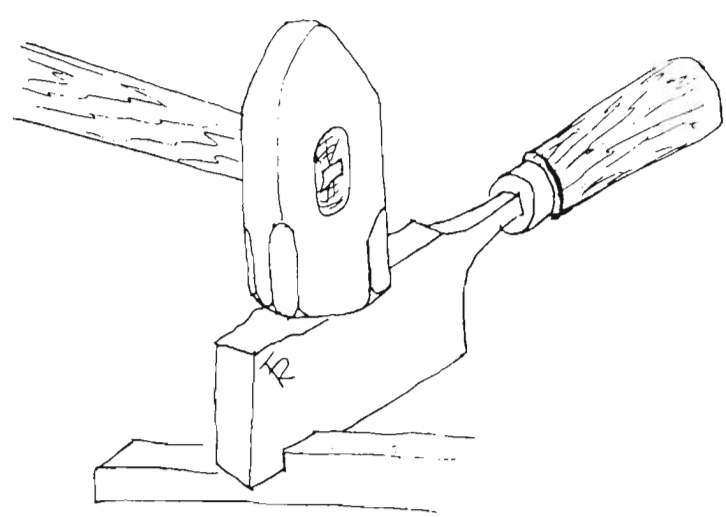
In use, the working or cutting edge should be cooled frequently by dipping in water to maintain it's hardness. If it is ever over heated, remove the wooden handle and repeat the heat treating.











HOW TO MAKE A MINI TRAVELER

(From notes on an OBG Meeting Demo by **Mike Schaffer** submitted by both **Russ Vullo** and **Buster Grubbs**)

Mike makes these tiny measuring devices for use on scrolls mostly, but they can be put to good use in a number of ways. (See the related tips by Big Bob Watt elsewhere in this issue).

The Editor

You will need:

About 4" of 1/4"square stock, a bronze or brass disk of 1.27" Diameter, a 1/8" rivet, a small flat drift the same thickness as is the disk, and a ruler.

Step 1- Take the square stock and split one end for about 1". Spread the split slightly and clamp (this split end up) firmly in a vise. See figure 1.

Step 2- With the drift shown in figure 2, finish spreading the forks of the split down to the bottom of the split. Reheat the piece and close the split with the drift in position between the two forks by squeezing them together in the vice jaws.

Step 3- Forge the handle end into whatever shape that you desire. *(Tip: an almost closed hook is handy for hanging such items as this and your Nail Header on the belt loop of your pants.)*

Step 4- Find and mark the center of the brass or bronze disk with a center punch.

Step 5- Drill a 1/8" hole through the sides of both forks near the end as shown in figure 3, insert the disk between the forks and drill the 1/8" hole in the center of the disk.

Step 5- Put the 1\8" rivet through the pieces and peen. *(Tip: If you add a paper washer on each side of the disk while riviting, it will provide proper clearance for moving objects such as this disk, after the paper is burned out of the item.)*

Step 6 - Roll on a ruler and file to calibrate so that one revolution equals exactly 4". Mark as in Fig.6

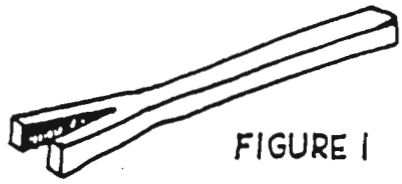


FIGURE 1

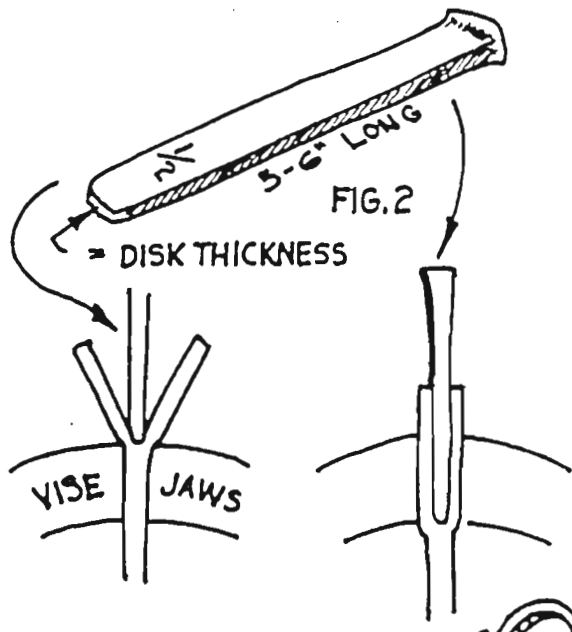


FIG. 2

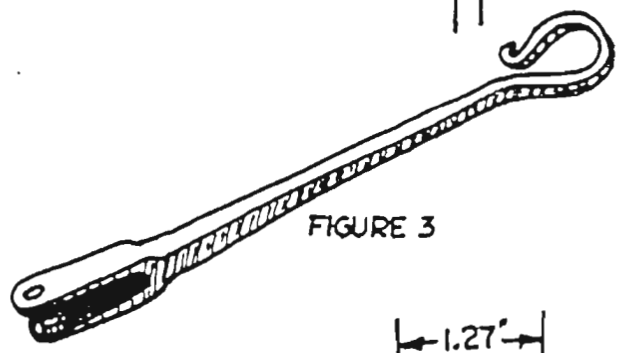
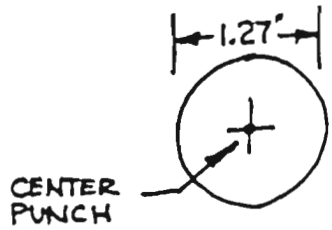
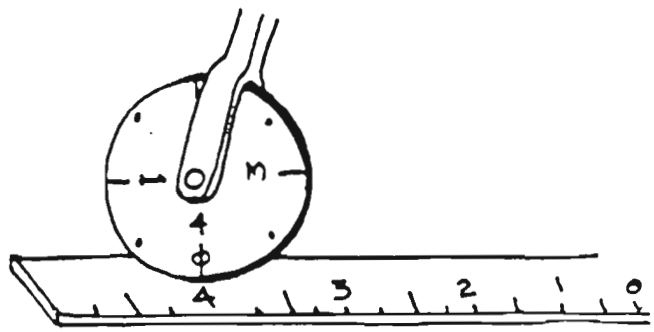


FIGURE 3





NJBA Roster

[This roster is provided as a service to the membership. Please use it to arrange carpools to events or to meet persons of similar interest. Please do not distribute or otherwise misuse this roster. If you would like to advertise to the NJBA membership you may do it by placing an ad in this newsletter. Please submit changes or corrections to your entry to me. Bruce Freeman. -Ed.]

Len Achenberg	5 Hidden Hollow Terr.	Holmdel	NJ	07733	732-739-9391	prebin@aol.com
Julie Adkins	534 Keebler Rd.	King of Prussia	PA	19406		
David Barth	3 Washington Ave.	Morganville	NJ	07751	732-536-3460	dsbarth@worldnet.att.net
Sandy Bartholet	45F Lafayette Ave	Chatham	NJ	07928	973-635-6445	
Peter C. Bazakas	354 New Rd.	Southampton	PA	18966	215-355-7855	
Marshall Bienstock	663 Casino Dr.	Howell	NJ	07731	732-938-6577	mbienstock@worldnet.att.net
Larry Brown	90 William Ave.	Staten Island	NY	10308	718-967-4776	
Melissa Butensky	149 Smith St., Apt. 2	Brooklyn	NY	11201	718-625-1938	melbutensky@yahoo.com
Jim Cassidy	35 Clinton St.	Center Moriches	NY	11934	516-878-8213	
John Chobrda	231 Morrison Ave.	Hightstown	NJ	08520	609-443-3106	JChob@earthlink.net
George Ciocher	148 71st Street	Guttenberg	NJ	07093	201-861-3150	
John Crawford	609 Bergen St.	Brooklyn	NY	11238	718-783-7172	
Dan Cruzan	146 Harmony Rd.	Bridgeton	NJ	08302	609-451-0904	dcruzan@jmlk.com
Carl Davison	112 N. Putt Corners Road	New Paltz	NY	12561	914-255-8125	carlrd@worldnet.att.net
Steve Dickinson	46-7 Jason Ct.	Freehold	NJ	07728	732-308-0539	tigmer@erols.com
Henry Don	PO Box 131	Campell Hall	NY	10916		suresign@frontiernet.net
Patricia Donovan	34 Saint Davids Rd.	Springfield	PA	19064	610-328-2316	alchemy@bellatlantic.net
James Dunmire	161 Mountain Rd.	Ringoes	NJ	08551	609-355-0743	
Pete Engle	47 Center St.	Rumson	NJ	07760	732-219-6560	pgengle@aol.com
Jon Folk	P.O.Box 143	Old Bethpage	NY	11804	516-474-3109	rn425268@nassaulibrary.org
Bruce Freeman	222 Laurel Place	Neptune	NJ	07753	732-922-8408	freeman@monmouth.com
William Futer	Park Crest Vil 12-A	Glasboro	NJ	08028		willy@snip.net
Thomas Gambino	92 Halsey Reed Rd.	Cranbury	NJ	08512	609-395-8525	
Bill Gerhauser	415 Hutchinson St.	Hamilton	NJ	08610	609-394-1817	
Bill Gichner	Box 8	Bethany Beach	DE	19930	302-539-6974	
Hector Giumetti	466 Freund Ave.	Gibbstown	NJ	08027		hagiumet@bellatlantic.net
Thomas Glynn	278 Sterling Pl	Brooklyn	NY	11238		
Jerry Goldman	1143 Virginia Ave.	Cape May	NJ	08204	609-884-3821	
Ron Grabowski	110 Burlington Blvd.	Smithtown	NY	11787	516-265-1564	
Joe Grasso	191 Rockaway Pkwy.	Valley Stream	NY	11580	516-561-7963	joetoolie@aol.com
Phillips Greg	737 Route 17K	Montgomery	NY	12549	914-457-5671	
Donald D. Harbert	222 Mill Road	Marlton	NJ	08053	609-767-5807	
Michael Hargrove	122 Vesper Ave.	Westmont	NJ	08108	609-854-5063	Edhmdh@aol.com
E. Lee Hart	115 Milton Dr.	Thornwood	NY	10594		
Bruce Hay, Jr.	50 Pine St.	Lincroft	NJ	07738	732-747-4758	
Donald J. Heliker	92 Main St.	Oceanport	NJ	07757	732-542-0771	
Jim Helstrom	6391 Ferry Rd.	Doylestown	PA	18901	215-236-7041	
Fred F. Hessinger	15 Washburn Rd.	Pompton Plains	NJ	07444		
Heinz K. Hilmer	40-14 68 Street	Woodside	NY	11377	718-426-3886	
Mike Hirsch	84 Victor Street	Plainview	NY	11803	516-822-5086	HirschMike@aol.com
Richard Holcombe	#8 Zieglers Lane	Hamilton Square	NJ	08690	609-587-1097	
Anton Holstrom	26 Saddle Shop Road	Ringoes	NJ	08551	609-466-0349	
Robert Holzman	9 Jodi Lane	New City	NY	10956		
Rudy Huebner	9302 Andover Rd.	Philadelphia	PA	19114	215-671-8373	
Ron Jani	11 McKinley Dr.	Rockaway Boro	NJ	07866	973-625-5442	BlkPnFrg@aol.com
Philip F. Kaufman	1333 Michael Road	Meadowbrook	PA	19046		
Joshua Kavett	471 Casino Dr.	Farmingdale	NJ	07727	732-431-2152	jakavett@aol.com
Bill Ker	Box 14	Allenwood	NJ	08720	732-223-4188	KemoKimo@aol.com

NJBA Roster (continued)

C. William	Knudson	PO Box 53	Palisades	NY	10964	
Eric	Landmesser	118 Patton Ave	Pine Beach	NJ	08741	732-240-3062
Doug	Learn	14 Independance Way	Doylestown	PA	19801	215-489-1742 doug learn@Primedica.com
Doug	Longo	36 Britton St.	Madison	NJ	07940	
David	Macauley	4 Patricia Ct.	Howell	NJ	07731	732-206-1568 drm@anchor.ho.att.com
Miro	Machovec	1036 Willowbrook Rd.	Staten Island	NY	10314	718-816-8660
Tom	Massey	306 Peck's Corner Rd.	Salem	NJ	08079	
Jim	McAllister	214 8th St.	Hicksville	NY	11801	516-433-1949
Tony	Melillo	69 Kirk St	W. Orange	NJ	07052	
Mike	Mills	16 N. Main St.	Cape May Ct. House	NJ	08210	609-465-4443
Samuel	Mirenda	508 S. Lehigh Rd.	Glassboro	NJ	08028	609-881-5016
Tom	Molnar	1632 Old York Rd.	Allentown	NJ	08501	STMOLNAR@WEB-ITSHOW.COM
Arthur M.	Monsen	5 Brooktree Rd.	East Windsor	NJ	08520	609-449-4454 blacksmithart@yahoo.com
Jeff	Morelli	43 Locust La.	New Egypt	NJ	08533	
H.T.	Murphy	59 Maryland Ave.	W. Long Branch	NJ	07764	732-229-1946
Norman	Nelson	199 School Road East	Marlboro	NJ	07746	732-462-6093
Alan	Papp	167 Dey St.	Jersey City	NJ	07306	
Nate	Pettengill	24 Byron Rd.	Short Hills	NJ	07078	npetteng@motown.lmco.com
David	Potts	2375 Old York Rd.	Bordentown	NJ	08505	609-298-3660 dpotts@nburlington.com
Thomas	Reilly	360 Page Ave.	Lyndhurst	NJ	07753	201-939-2287 or 201-998-0149
Steven W.	Rhoades	513 Harding Highway	Vineland	NJ	08360	609-697-4144
Bruce	Ringler	618 Mazur Ave.	Paramus	NJ	07652	973-875-5200
Bob	Scarlett	414 Montclair Dr.	Pleasantville	NJ	08232	609-641-5322
Charles E.	Schelleng	3309 Brinley Rd.	Wall	NJ	07719	732-681-6959
Don	Schweikert	38 Hopkins St.	Sayville	NY	11782	516-589-3970 dschwerk@juno.com
Sidney	Siegel	65 North 7th St.	Brooklyn	NY	11211	
William	Spoerri	HC 62 Box 820	Honesdale	PA	18431	717-729-8815
Raymond	Strom	37 Beverly Ave.	East Patchogue	NY	11772	516-475-9361
Hugh J.	Stryker	63 Sandy Point Dr.	Brick	NJ	08723	732-447-9266
Ben	Suhaka	715 Haran Ave.	Manville	NJ	08835	908-722-8197
Tim	Suter	1112 Ladner Ave.	Gibbstown	NJ	08027	609-423-4417
L. Curtis	Tindall	36 Elm Terr.	Flemington	NJ	08822	908-806-3856
Robert	Tomczyk	25 Virginia Ave.	Livingston	NJ	07039	973-992-3102
Andy	Vida-Szucs	13 Old Monmouth Rd.	Freehold	NJ	07728	732-308-9039 osan@bellabs.net
Gary	Williams	PO Box 479	Quakertown	NJ	08868	908-735-6241 gwilliam@njjersey.com
Lincoln	Wolfe	11 Overlook Terrace	Bloomfield	NJ	07003	

In Memory of Donald Streeter

Donald Streeter, 93, died December 26, 1998, in Santa Barbara, California, where he lived for 16 years. Born in Vineland, New Jersey, he attended Bucknell University at the Philadelphia College of Art and studied at the Art Students League in New York. He started studying smithing around 1930 and fortunately enrolled in a locksmithing class under Sam Yellin's guidance. He and his brother, Gary, built both the shop and trade in Franklinville, New Jersey, a little north of Vineland. Pictures of the shop are in his book, *Professional Blacksmithing (the picture on the front cover was taken from the jacket of that book)*. Most of his work was focused on producing early American ironwork for various buildings and organizations in 31 states and Canada. In 1981 Don gave a two-day demo at Raffi Berlyn's shop. His finished pieces were filed smooth. There were no forging marks. ♣

reprinted from: **California Blacksmith**

NJBA Members Alphabetically by First Name

[Remember to check by both full and shortened forms, e.g., both "Robert" and "Bob."]

Alan Papp
Andy Vida-Szucs
Anton Holstrom
Arthur M. Monsen
Ben Suhaka
Bill Gichner
Bill Gerhauser
Bill Ker
Bob Scarlett
Bruce Freeman
Bruce Hay, Jr.
Bruce Ringier
Carl Davison
Charles E. Schelleng
Curtis Tindall
Dan Cruzan
David Barth
David Macauley
David Potts
Don Schweikert
Donald D. Harbert
Donald J. Heliker
Doug Learn
Doug Longo
Eric Landmesser
Fred F. Hessinger
Gary Williams
George Ciocher
Greg Phillips
H.T. Murphy
Hector Giumetti
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Henry Don
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James Dunmire
Jeff Morelli
Jerry Goldman
JimCassidy
Jim McAllister
Jim Helstrom
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John Chobrda
John Crawford
Jon Folk
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Larry Brown
Len Achenberg
Lincoln Wolfe
Marshall Bienstock
Melissa Butensky
Michael Hargrove
Mike Hirsch
Mike Mills
Miro Machovec
Nate Pettengill
Norman Nelson
Patricia Donovan
Pete Engle
Peter C. Bazakas
Philip F. Kaufman
RaymondStrom
Richard Holcombe
Robert Holzman
Robert Tomczyk
Ron Grabowski
Ron Jani
Rudy Huebner
Samuel Mirenda
Sandy Bartholet
Sidney Siegel
Steve Dickinson
Steven W. Rhoades
Thomas Gambino
Thomas Glynn
Thomas Reilly
Tim Suter
Tom Massey
Tom Molnar
Tony Melillo
William Futer
William Knudson
William Spoerri

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Bloomfield.....L. Wolfe
Bordentown.....D. Potts
Brick.....H. Stryker
Bridgeton.....D. Cruzan
Cape May.....J. Goldman
Cape May C.H.....M. Mills
Chatham.....S. Bartholet
Cranbury.....T. Gambino
East Windsor.....A. Monsen
Farmingdale.....J. Kavett
Flemington.....L. Tindall
Freehold.....S. Dickinson
Freehold.....A. Vida-Szucs
Gibbstown.....H. Giumetti
Gibbstown.....T. Suter
Glasboro.....W. Futer
Glassboro.....S. Mirenda
Guttenberg.....G. Ciocher
Hamilton.....B. Gerhauser
Hamilton Sq.....R. Holcombe
Hightstown.....J. Chobrda
Holmdel.....L. Achenberg
Howell.....M. Bienstock
Howell.....D. Macauley
Jersey City.....A. Papp
Lincroft.....B. Hay, Jr.
Livingston.....R. Tomczyk
Lyndhurst.....T. Reilly
Madison.....D. Longo
Manville.....B. Suhaka
Marlboro.....N. Nelson
Marlton.....D. Harbert
Morganville.....D. Barth
Neptune.....B. Freeman
New Egypt.....J. Morelli
Oceanport.....D. Heliker
Paramus.....B. Ringier
Pine Beach.....E. Landmesser
Pleasantville.....B. Scarlett
Pompton Plains...F. Hessinger
Quakertown.....G. Williams
Ringoes.....J. Dunmire
Ringoes.....A. Holstrom
Rockaway Boro.....R. Jani
Rumson.....P. Engle
Salem.....T. Massey
Short Hills.....N. Pettengill
Vineland.....S. Rhoades
W. Long Branch...H. Murphy
W. Orange.....T. Melillo
Wall.....C. Schelleng
Westmont.....M. Hargrove

New York

Brooklyn.....M. Butensky
Brooklyn.....J. Crawford
Brooklyn.....T. Glynn
Brooklyn.....S. Siegel
Campell Hall.....H. Don
Center Moriches.....J. Cassidy
East Patchogue.....R. Strom
Hicksville.....J. McAllister
Montgomery.....G. Phillips
New City.....R. Holzman
New Paltz.....C. Davison
Old Bethpage.....J. Folk
Palisades.....C. Knudson
Plainview.....M. Hirsch
Sayville.....D. Schweikert
Smithtown.....R. Grabowski
Staten Island.....L. Brown
Staten Island.....M. Machovec
Thornwood.....E. Hart
Valley Stream.....J. Grasso
Woodside.....H. Hilmer

Pennsylvania

Doylestown.....J. Helstrom
Doylestown.....D. Learn
Honesdale.....W. Spoerri
King of Prussia.....J. Adkins
Meadowbrook.....P. Kaufman
Philadelphia.....R. Huebner
Southampton.....P. Bazakas
Springfield.....P. Donovan

How to Join or Renew your Membership in NJBA:

NJBA dues are $15 per year. Please make out your check to

"New Jersey Blacksmiths Association."

Please mail checks to

NJBA, 222 Laurel Place, Neptune, NJ,

along with the following information. You will receive the most recent newsletter as an acknowledgment of your membership. Annual dues are due on June 1. If you join in April through June, you will not owe renewal dues until June of the following year. If you join at another time of year, your will owe dues the following June.

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

Name_____ Home Phone_____

Address, City, State, Zip_____

Electronic Mail Address_____

New Jersey Blacksmiths Association

Newsletter

222 Laurel Place
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