HAMMER'S BLOW

A Quarterly Publication Of ABANA

JOURNAL OF THE ARTIST-BLACKSMITHS' ASSOCIATION OF NORTH AMERICA

VOL. 11, # 1

WINTER 2003

CHRIS WINTERSTEIN DEMONSTRATES

Editor: Brian Gilbert
Publisher: Rob Edwards, Sebastian Publishing
Printing: Sundance Press, Tucson, AZ

Next Deadline: April 15, 2003
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Hammer's Blow, USPS 018-972, ISSN#1531-0302 is a journal of the Artist-Blacksmith's Association of North America, Inc. (ABANA, a non-profit corporation) and is published and mailed to members on a quarterly basis by ABANA, PO Box 816, Farmington, GA 30638, (706) 310-1030. Membership is available to anyone interested in the art of blacksmithing at the regular membership rate of $45 per year. Matters relating only to membership, magazine or journal subscription should be addressed to LeeAnn Mitchell, ABANA office, 1880 Old Salem Rd, Watkinsville, GA 30677. Periodicals postage paid at Farmington, GA 30638 and at additional mailing offices.
POSTMASTER: Send address changes to Hammer's Blow, P.O. Box 816, Farmington, GA 30638.

NOTICES

From the President

Dear ABANA Members,

What's new with ABANA? If you have a computer as well as a hammer, (a tempting and dangerous combination) I suggest that you go to the ABANA web site and see what you can find.

The minutes of the November 2002 board meeting in Richmond, Kentucky are there. If you are interested you can see what we do for three or four days. Yawn. There is also a supplier directory with around 700 entries, information and links to schools, scholarship applications, events, news announcements, photos, and a lot more. Check it out.

I mentioned low voter turnout in my last message, and it occurred to me that if only a couple hundred members bother to vote, and it costs the association close to $3,000. to print and mail the 5000 ballots, then this means that it cost you nearly $15. per vote! Whoa! Please take five minutes and vote next time. If everyone voted, it would only cost ABANA about sixty cents each. It's your association and your choice. Thanks.

On a related subject I want to strongly urge any member with ACCOUNTING EXPERIENCE to run for the board and for the membership to elect such a person. This is one of the most important issues facing you in ABANA's future. I have praised the yeoman's work of your Treasurer, Will Hightower. He won't be in the job forever (it only seems like it some days) and of all the possible serious issues facing our future, this one is huge. It is critical to have someone on the board to begin learning this job and be ready to step up to the Treasurer's plate when the time comes. Please if you are such a person, or know one, ABANA really needs you.

Of course the real purpose of our group is blacksmithing, not finances. The money needs to be managed simply to insure the long-term prosperity of blacksmiths. Let's get out there and forge some steel! To quote the late Don Hawley, the esteemed hammerman from California, "forging hot steel is the second best feeling in the world.".

The 2004 Conference is in the final throes of negotiations. By the time you read this I have to believe that the exact time and place will be carved in iron and up on the web site. If you can't see it there, feel free to pick up the phone and call me. Or call one of your other directors for the latest facts or rumors! For now, think Bluegrass in the summer of 2004.

Good forging,

Scott Lankton

ABANA President

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BLACKSMITH'S BOOKSHELF

Wheelwrighting: A Modern Introduction

by Bruce and Joyce Morrison

Cottonwood Press

Box 13, Site 20, R.R.#1
DeWinton, AB T0L 0X0

(403) 938-5954

Spiralbound, 371 pages

Reviewed by Brian Gilbert

This new arrival is a general reference book on a subject that was once a common job in many of the more remote blacksmiths shops… the repair and replacement of wagon wheels. This is a large reference that includes detailed information on just about every aspect of wheel making and repair .

Even if you never plan on building wheels, there's information in this book that you can't seem to find anywhere else. For example, do you know the difference between "felloes" and "rims?" It's easy to find here (Felloes, or originally the word "felly" referred to the sawn wood sections that encircle a wheel. Later, when bent wood began to be used in the 19th century they were called rims. In most places today wheelwrights refer to rims as felloes and the older system as "sawn felloes.")

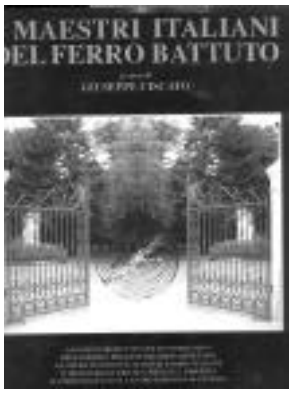
The book covers building and repair of several types of commonly used wheels, and I was amazed to learn of the wide variety of styles and applications. Just considering the hubs, there are Sarven hubs(often associated with buggies), common carrage hubs(plain and ornamental, colinear or staggered spokes), patent bolted hubs(Graber style and Pennsylvania Bolted), and others. There is also a special projects chapter on the fine points of cannon wheels

And, of course, it goes into detail about setting tires. There's more here than I ever realized… correctly shrinking iron tires is certainly covered, but also channel iron bands and rubber tires as well.

The appendicies list sources for training, making wheelwright tools, suppliers, buggy building resources, dishing wheels, and wood drying.

This book is spiral bound with numerous B&W illustrations. Given the limited audience and specific nature of the information, it seems that the price of $46 represents a good buy. Although I wouldn't think this a "must have" for the average smith, if you're into reenacting or horses and have wondered about wheelwrighting, this would be a terrific source of basic information.

BLACKSMITH'S BOOKSHELF



I Maestri Italiani del Ferro Battuto (Italian Masters of Wrought Iron)

Giuseppe Ciscato

Available in the US from
WWW.ArtisanIdeas.com
(212)253-9599

In Italian. English language introduction, English and Italian directory of working Italian blacksmiths
493 pages, Hardbound $140
Reviewed by Brian Gilbert

Just in case you were wondering, blacksmithing is alive an well in Italy.

This massive work, with nearly five hundred pages of photographs, most in color, shows the great diversity of ironwork currently being produced in Italy. These examples range from very traditional to very contemporary, and there are so many examples that you can see just about everything in between.

The book is organized in logical sections. The first one hundred thirty pages includes photographs interior furnishings, furnishings for the garden, monuments and grave markers, forgings for the church, balconies, railings and gates… all in color.

The nexy section is entitled, "Designs, Sketches, Ideas, Plans." Here are presented the construction drawings and sketches by many Italian artist-blacksmiths, including twenty pages of designs by Simon Benetton in a separate chapter.

Next, thirty-seven pages show both the design drawings and the finished, installed pieces, with some examples shown during production. This is especially interesting to us blacksmiths, and gives a glimpse into the shops where these works were produced.

Several photographic essays of four to twelve pages each follow, covering structural architectural elements, door hardware, floral work, grates, weathervanes, signs, and coats-of-arms, lamps, beds, dividing screens, and forged roof platforms. One of my favorites… "Porta Ceri," or Candlestands.

The next chapter concerns restoration of historic ironwork, and contains more text than any of the other chapters, unfortunately all in Italian. Stairwells and sculptural work complete the photographic essays. A section on the "European School" and ironwork in Venice is next, and includes more sketches and works in progress photos… photos of a lock by Carl Meloun are simply incredible.A section of artist biographies completes the book, which are written in Italian and English.

One cannot look at a book such as this and not be amazed, both by the encyclopedic scope of the book itself, and of the work within. While an English language introduction accompanies this book, I really wished I remembered my college Italian classes, and was constantly referring to the internet for translations. Still, the value is in the content, which is breathtaking.

LETTERS

Newton's Second Law

Brian...

I am new to blacksmithing but not new by any means to metal working. I really appreciate the "Controlled Hand Forging" series that is just beginning. It is perfect for me.

Just one comment that you might pass along to Dan. On page 21 lower left hand paragraph he says "Force = mass x velocity" That is incorrect. It is F = ma which is Force = mass x acceleration. I assume he is trying to say that the faster the hammer hits the hot metal the greater the force.

There are, believe it or not, some fairly involved engineering mathematics involved here even though the equation appears quite simple.

This is actually Newton's second law!

I hope this isn't being too picky but I felt it should be corrected.

Thanks very much for the article. I found it very helpful as I am just setting up my blacksmith shop.

Floyde Adams

More on Treadle Hammer Modifications

As a machinist, welder, fabricator, blacksmith and machine repair technician, I am compelled to respond to a letter from Clay Spencer printed in the fall 2002 edition of Hammer's Blow.

For 27 years I have produced, worked on, and repaired industrial machines of many types. The treadle hammer under normal air power is no more dangerous than any other machine of its type and is not An example of questionable design

As Gary Evensen, the designer of the conversion, describes, using the treadle hammer requires you to be balanced on one foot while the other foot is poised to depress the treadle to cause the hammer to strike. At the same time, you hold tooling in one hand and the workpiece in the other.

It is a very useful, yet demanding machine. Of all of the machines in our shop, it is Without doubt one of the most dangerous. It requires a well-developed sense of balance, depth perception and hand-eye co-ordination to use it properly. There are any number of blacksmiths who can do so. The balancing act required to operate it only adds to the risk of personal injury; but, it's a risk we are willing to take because it usually moves metal faster and more precisely than most of us can with a hand held hammer.

Clay is of the opinion that a treadle hammer powered with an cylinder will tear itself apart. Certainly a poorly made machine will break prematurely, but I do not think that broken welds are going to be a problem if the welding is done properly in the first place. Gary says that he can, without a doubt, hit a stronger blow on his treadle hammer by powering it with his foot rather than with an air cylinder. I don't know what pressure Gary is using to power his air cylinder, but with enough pressure, mine is capable of hitting harder under air power, but not appreciably harder. After using mine for more than 2 years under air power the hammer has performed flawlessly and no components have failed.

There should be no difficulty using the treadle hammer as originally designed with the air power conversion installed. It is only necessary to disconnect the air from the system and use your foot to power the machine. The air cylinder, having very little internal friction, Just goes along for the fide.

In my opinion, this is a good modification. I do not think that any harm will come to you or your treadle hammer if you convert it to air; however, use it with caution and inspect welds and fittings regularly. Use some common sense and do not overpower the machine with excessive air pressure. The maximum pressure at which I have operated my treadle hammer, which has a 2" air cylinder, is 120PSI. This amount of pressure on a 2" cylinder would, theoretically, produce 377 lbs. of force, but there is always pressure loss to friction *in the air lines, fittings and air cylinder. I normally do not use this much air pressure as 20 to 90 lbs. does virtually everything I require.

Everyone is entitled to an opinion,. Gary has his, Clay Spencer has his, and 1, of course, have mine. I suggest that anyone contemplating such a conversion should consider all of the available information, bounce is off a few fellow blacksmiths, and then make an informed decision. This issue of whether or not to make the conversion does not have to be a big deal. just use discretion in how you do it and be sure the welds are good, the electrical and air connections are sound and that adequately sized materials were used to make the machine. Above all, be safe, keep your hands away from the hammer and your feet away from the treadle while operating the machine.

Tom Lupton, Lupton Machine

Austin, Texas

From The Editor

In the last issue (HB 10/4, Fall 2002) I made a few comments regarding safety at the end of Clay Spencer's "A Warning from the Designer" My remarks over-editorialized on a subject where I'm clearly no expert… designing treadle and power hammers. I meant no disrespect at all to Mr. Evensen, but intended to encourage safety in the shop. Upon reflection, though, my remarks were inappropriate, and I'd like to apologize to Gary for giving the wrong impression. BG.

Fire at Tom Latané's Shop

And not the good kind. An ember or spark found its way into the charcoal bin the night before Tom was to leave for a class at John C Campbell Folk School, destroyng a portion of a stud wall and filling the shop with an acidic smoke. Fortunately, the fire was discovered by a neighbor, and the volunteer fire department was able to prevent the damage form becoming much greater. The bin's metal lining slowed the spread of the fire. Tom is currently rebuilding and cleaning, and expects to be back to work shortly

Meyer Machine
Ad space- full page

Mini Leg Vise

by Louie Raffloer, Black Dog Forge

Here's a useful trick for adapting a small leg vise in the shop. This is a good use for those flea-market vises with hacked off or damaged legs. By welding a hardy stem on the yoke and installing a small socket on the floor or stump for the foot, you can instantly set up a low vise for a variety of applictions. This works especially well when you need to hammer on the vise, but a normally-mounted vise is too high. When not needed, the vise is lifted up and stored out of the way.

Anvil-mounted leg vise

Mini Layout Table

by Louie Raffloer

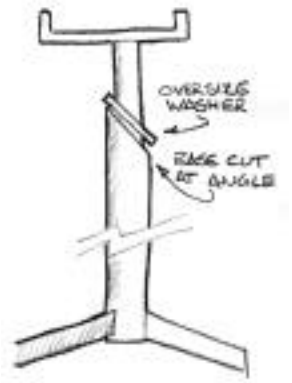
Black Dog Forge is a small space, and the blacksmiths there have adapted many solutions to work in tight spots. Thismini work/layout table is great for small applications and is easily made from short drops of C-channel that have been scrapped by heavy construction companies. A heavy base and casters completes the set-up. If you don't have hard floors, you may want to skip the casters, but these can still be very handy.

Mini layout table from structural drops

Self-Adjusting Smith's Helper

by Bob abd Barb Esse, reprinted from The Anvil's Ring, Volume 9, Number 1(Spring 1981

Here is a helper that is easily adjusted with one hand. An oversized washer (that slides up and down the upper rod easily) can hold the helper rigidly in position as it hits the bottom tube, which is cut at an angle. The washer tries to take on the angle of the bottom tube and binds the upper rod, holding it tightly.



Cutting the base at an angle makes a helper self-adjusting.

Forging with Anthracite Coal

By David Zatz

What wonderful contrasts in life sometimes. While my first inspiring exposure to blacksmithing came in the mid-1970's during months spent on a windy mesa top in central Arizona with 40 mile vistas all around, when I decided to seriously pursue this work it was in the cluttered basement of a row house in Brooklyn with 7 foot ceilings, people living all around and a fire house 100 yards up the block.

I quickly learned that the burning of soft coal was banned in New York City. Some argued that on a small scale I might be able to get away with it. But after one trial on a summer night, poking my head up out of the cellar hatch like a nervous mole to see the street filled with green smoke, I knew this was out.

Friends of mine had used commercial coke with good results. The local yard always had coke and anthracite coal. Whenever I asked opinions about anthracite, everyone said, don't even bother, you'll never get a proper heat out of that stuff.

So coke it was. I learned that coal and coke were graded according to size - breeze (dust), buckwheat, pea, nut, egg and stove in ascending order, and that buckwheat and pea were best suited for a small forge. I was never able to get anything smaller than "Nut" size coke - typically 2" square chunks, always too big. I spent way too much time stooped over with a sledge hammer smashing the stuff on the floor. I eventually bought an old ice crusher - blades on a spinning drum inside a cast iron hopper. This sort of worked, but too often the drive chain jumped off the sprockets when the chunk of coke was too big and.... after smashing a bag or two of coke, a cloud of black dust would hang off the ceiling throughout the shop. A lot of time and a lot of mess.

As to my feelings about the coke fire— well, it was good and hot, but tended to burn out a little too quickly for my taste, and given the coarse, abrasive surfaces of the chunks of coke, they grab onto each other, making it difficult to slide a bar into the middle of the fire. One day, I impatiently shoved a large bar into the base of the heat and the entire fire flew out the back of the forge and onto the floor behind.

I'd had it with coke and I decided I'd give Anthracite a real try. Pea, the most common size was perfect for the forge. As with coke, I started a wood kindling fire— hard coal took a bit longer to get going. I ran the blower at maximum, it burned with a clean blue flame and after awhile, got up to a medium orange heat but no further.

The blower I'd been using worked fine with coke, but as Anthracite is so much more smooth and dense, it seemed likely that it might need more air to get a proper heat. I might have given up at this point, as others I knew had, but luckily I had a noisy but much more powerful blower on the shelf. I hooked this up and bingo—I got a blinding white heat. At this degree of draft, soft coal or coke would probably have blown right out of the fire.

Forge set up for anthracite with swiveling refractory cover

I piled up the coal, and put a piece of 1 1/2" round into the middle of the fire, got busy with something else, looked back over my shoulder after a short while, figuring the bar must be hot by now, pulled it out and, through the explosion of sparks, saw that 2" of the bar had burned away without a single spark showing itself above the fire. Jesus!

Well, clearly tremendous heats were possible with hard coal with a good air draft behind it, and always keeping the work on top of an open fire seemed like the best idea. As hard coal will not coke up like soft, you can't ever make a dome or beehive fire with it and burying the workpiece in the fire is inadvisable for the reasons just described. Hard coal lends itself best to an open fire.

I began using hard coal exclusively, eventually built a swiveling, height-adjustable refractory cover over the fire, and here is where I really started loving the Antracite fire. I saw that this could work like a very flexible gas fire with a great hot mass. The cover also shields your eyes against most of the glare, and there is a lot of that as the fire is always open.

Having been impressed with how much heat and work I get out of this coal, I checked BTU ratings and was told Bituminous averages 11,000 BTU's/lb. and Anthracite 16,000 BTU's/lb. This is a very concentrated fuel.

As the fire burns away underneath and clinker forms, you can keep raking fresher coal over the top and get another good run of fire for quite awhile, just as they do in coal fired boilers. I find I can work many hours before I have to clear out clinker.

I did eventually build a gas forge for my shop, but only find it cost effective when I am doing the most efficient, repetitive production operations such as chisel dressing. For larger, creative and experimental work, I love the anthracite fire.

Starting the fire, coal is added gradually.

Other Points

FIREPOTS - I set my first forge up with an old, cracked cast iron firepot I got at a swap meet and used it with hard coal for years.

Ceramic refractory will not work for long as the enormous volume of clinker hard coal produces will build up quickly and the refractory will tear out on removal.

Eventually I built myself a "pipe forge" as per an excellent *Anvil's Ring* article by Mitch FitzGibbon - (Summer 1990 Volume 18 #1). In this set-up, a large pipe runs front to back in the forge in a large steel pan. Air is supplied via ports made of 3/4" pipe welded to the top of the larger pipe. You can place the ports every few inches along the length of the pipe and create a fire of any length you like. Ash and cinders are banked up in the pan to cover everything and up to the tops of the ports. Just plug and cover the ports not in use. My forge is 36" front to back and I put around 15 ports spaced every 2". (While I was in Arizona, an old timer we met also recommended using packed wet ash from wood fires or "Colichi"— riverbed clay similar to Adobe. We built a large wooden box, packed it with Colichi and it worked wonderfully well).

I wouldn't care to have any other kind of coal forge. I can get a 10" long fire with just one port open. (Hmm…I guess that means that with all 15 ports open I should get a 150" long fire! Hey, try doing *that* in your Sandia gas forge!)

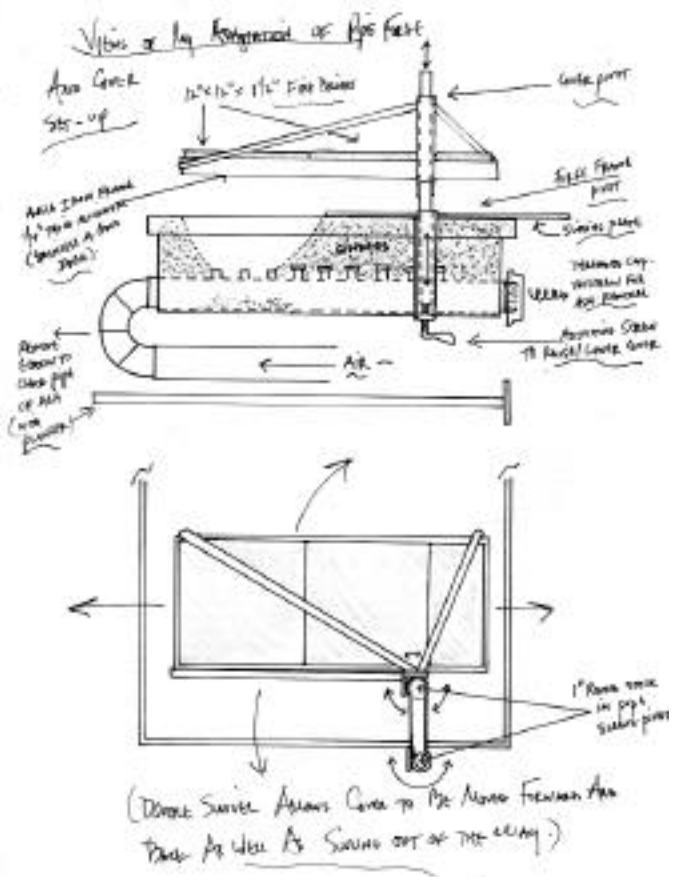
Refractory Cover

I built mine with several 12" x 12" x 2" hard firebricks in an angle iron frame attached to the side of the forge with 2 pivots… one on the forge frame and one on the cover, so the cover can be moved back and forth and swung completely out of the way. I also designed the pivot attached to the forge with an adjusting screw so the cover can be elevated several inches. Over time, slag will build up on the underside of the firebrick and should be chiseled and ground off. Always use the highest temperature refractories available. For patching, I've had good success with A.P. Green's GREEENPATCH #421 (3200 degrees F). They used to make some high temp. patch materials under the name "Jade" but these contain Chromium which is very toxic and I prefer not to use them.

As stated above, you need a lot more air with anthracite. The blower I have has a conventional Buffalo housing but I suspect that the motor is 1725 RPM rather than the 1,100 RPM I have typically seen with blowers of this type. The ideal arrangement might be a 0 - 10,000 RPM "universal" brush motor with a Variac.

Starting and Maintaining the Fire

Start with paper, don't skimp on the wood kindling and run a gentle draft into the kindling till you get a good roaring wood fire. Anthracite is a fairly clean fuel. If you add the coal gradually and don't smother the wood, you can get the fire up to heat with minimal smoke. Just make sure flames keep coming up through the coal. Once the coal is on, open up the draft. The coal can sit on top of the 3/4" pipe ports and impede the draft a bit. I use a pointed piece of 3/4" stock to poke down to the port and lift the coal away. You want to be sure you're hearing the full rush of air to know you're getting maximal draft. I use a long curved rake to bank coal in on the sides of the fire. Once the fire gets fully up to heat you may be surprised at how long it will burn without need of additional coal.



A forge modified for anthracite.

Holding Heats

Having gotten used to this fire and the kind of heat it generates, I can have several pieces soaking in the fire at full bright yellow heat for long stretches with minimal burning. I have found myself impatient when working at the fires of friends who use soft coal. My gut reaction is they're starting off too quickly and working too cold… getting a full forging heat requires very careful handling or you risk burning the workpiece. This cover helps tremendously when forging plate.

Forge welding

I've never done a lot of fire welding but I've always felt that if you can get a good, soaking heat without fresh oxygen hitting the surfaces, the parts should stick together. Such heat you can get in abundance given the mass of this fire, and its density means that backing off on the air a little will give you a good reducing atmosphere. I have had good success with what welding I've tried with this fire, with the cover on. I have sometimes had multiple bars in the fire stick together on their own. on one occasion had a wide flat bar soaking in the fire, accidently tipped it down toward me and had a small stream of molten steel run back toward my hands.

Forging Non-Ferrous Metals

Low, even temperature control is crucial with the copper alloys. This is just as easy to do in the hard coal fire as in a gas forge. A gentle draft can give you any low heat you want without hot-spots.

I've been extremely happy with how much work I can get out of the fire. The last batch of Anthracite I got was $180/ton. I typically use 40 lbs of it in a 4 hour period of average work, and some of the left over coal gets worked into the next fire. That's under $4 per fire.

Disadvantages

MUST CHOP KINDLING and start with a wood fire.

TAKES LONGER TO GET TO FULL TEMPERATURE it's probably like waiting for a hard brick gas forge to heat up.

LARGE FIRE- HARD TO MANAGE. It is very different from a soft coal fire. It really has to be regarded as a gas fire full of hot rocks . if I were doing a lot of hardware or small work, I might try building a very small firepot and cover.

OPEN FIRE, LOTS OF UV AND INFRARED- Very hot for the smith, dark glasses/eye shields a must.

CLINKER AND DUST- hard coal can contain 50-60% silica, so it does create a large volume of clinker and fine airborne ash and dust that is very bad news health-wise. There's lots of clean-up. Hard coal batches can vary a good deal. Sometimes I see a lot of fly ash and sometimes a lot of glassy clinker which has to be chopped out. I always have the exhaust fan on, wear a dust mask when cleaning the fire, and vacuum up the dust on and around the forge. (An in-line draft inducer would be a good idea. I love the side draft hoods but have never tried one with my set-up. The refractory cover does force the flame out in all directions around it, and I'm not sure if this wouldn't defeat the advantage of the side-draft hood. I'll try this one of these days.

Some of you may try anthracite and hate it. Others may find the value I have. Good Luck!

P.S. Anyone wanna buy a used ice crusher?

Anthracite forge coming up to heat.

Lesson One: Drawing Out

By Peter Ross and Doug Wilson

Illustrations by Tom Latané

Lesson Number One–

Draw a sharp point on a 1/2" square bar..

The taper should be straight, three inches long and in line with the axis of the parent bar. The cross section of the taper should be square. The surfaces of the bar should be smooth with no discernable hammer marks.The beginning of the taper should be a crisp line.

Intent:

Students will learn to draw out tapers of specified length and check their results for accuracy.

Tools Needed:

Forge, anvil, hammer, ruler, square.

Materials:

24" of 1/2" square mild steel bar (this is enough material to practice the exercise several times).

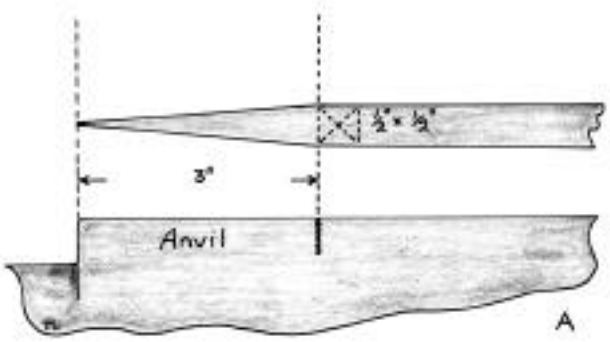
Method:

When working to a specified length, establish the point first, then extend the taper to the desired length.

Step One:

Mark the anvil with soapstone or marker three inches from the anvil step. This is the finished length of the taper you will forge.

Take a yellow-white heat on the end of the bar. Place the bar on

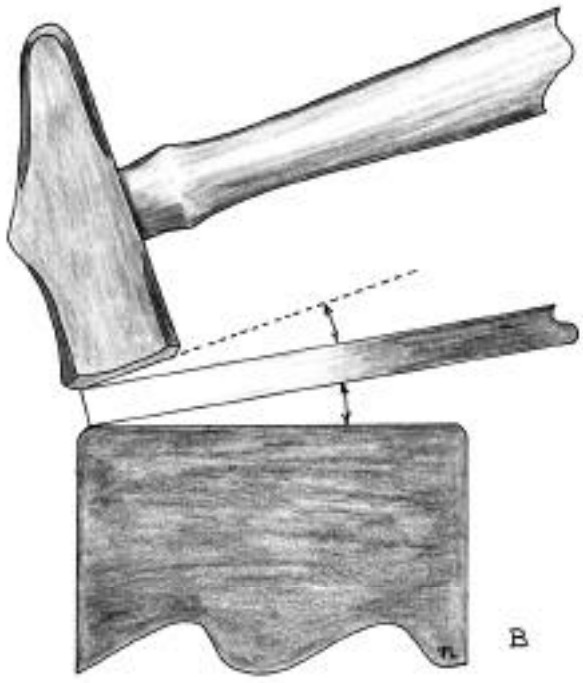


The measured piece held over the anvil.

the anvil so that the end of the bar is at the far edge of the anvil and only the end of the bar is touching the anvil face. This way, the hammer won't strike the anvil surface if it overhangs the hot bar. Strike a blow on the end of the bar with your hammer. The hammer should strike at an angle. There will be a wedge-shaped daylight space between the hammer face and the anvil face which corresponds to the angle of the taper you want to forge.

As you work, adjust the height of the bar as you hold it on the anvil and the angle of your hammer blows. If you hold the bar too high it will bend down in the middle; too low and the bar tip bends down. The bar will remain straight if you are gauging the angles just right.

Rotate the bar 90 degrees after every one or two blows to keep the bar from getting too wide as the forging progresses. Hit, turn



Placement of steel and position of the hammer blow.

90 degrees, hit and turn 90 degrees back again. You need only turn the bar back and forth as the underside of the bar is worked against the anvil. Continue this sequence of forging until you have made a sharp point.

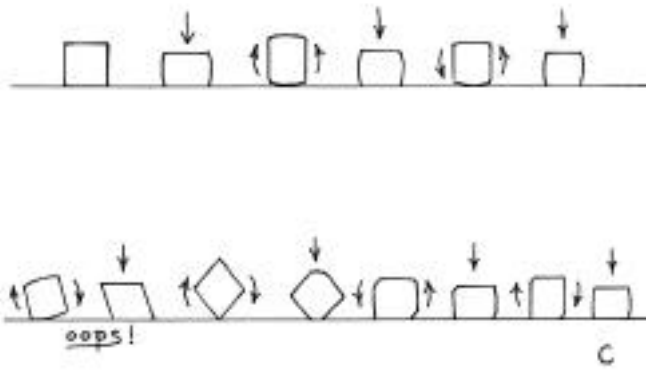
Hint:

It is very important to rotate the bar exactly 90 degrees each time. Use the original flats of the bar as a reference. If the turn is either more or less, the bar will become a parallelogram in cross section and that makes it difficult to attain the desired result.

If the bar does become a parallelogram, hit the corner of the long diagonal; then return to forging the flats of the bar. The sooner you catch and correct this error, the better. Keep a square cross section

Step Two:

Once the point is established, start working back from the point

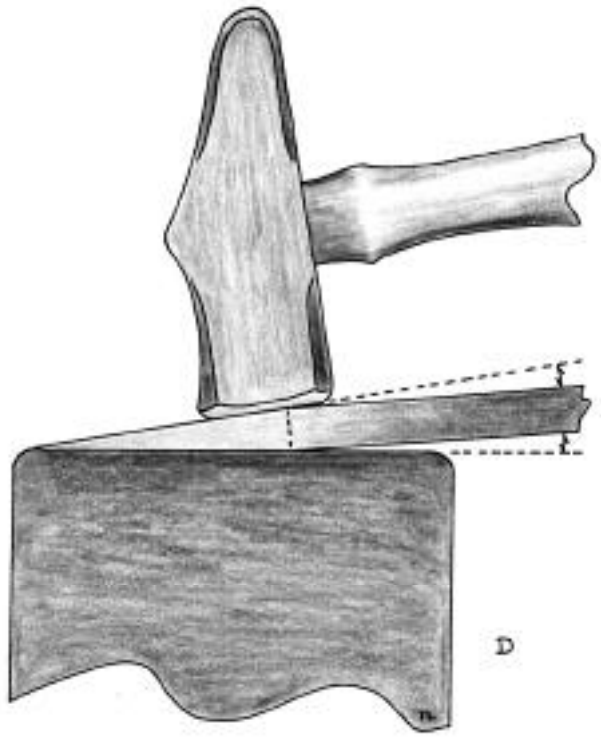


Rotation and deformation of the bar by the hammer, and correcting a parralellogram.

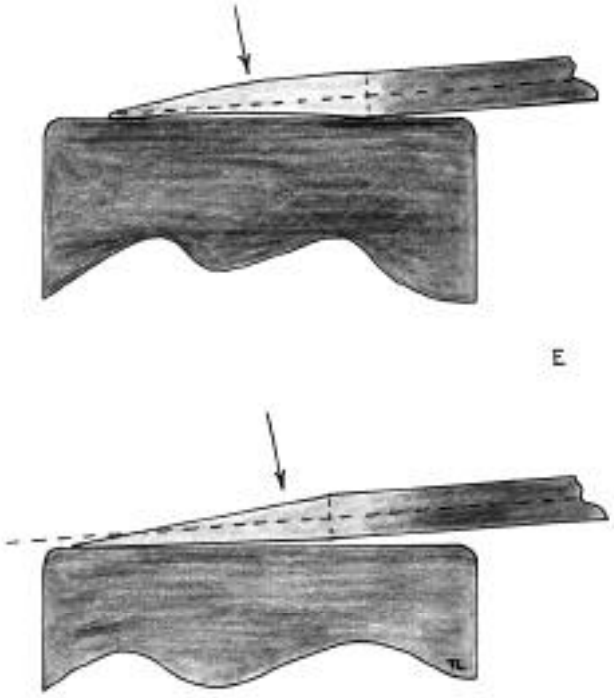
until the taper is 1/4 " short of the desired length . Work with heavy hammer blows at a bright heat while you are reducing the cross section. Lighter hammer blows at lower heats will help you refine the shape of your taper and smooth the surface. Establish a clear and well-defined beginning of your taper.

Step Three:

Now focus on smoothing the surfaces and straightening the taper at the same time. Make the taper straight and true. Refine the shape of the taper with light overlapping hammer blows. Do this as the bar cools to dark orange and red color. The bar scales less at this lower heat and you will get a smoother surface. Sight down the length of the bar for straightness. Straighten with light blows at low heat. Another way to tell if the taper is straight is to



Angle of the bar and hammer when dressing the final taper.



Straightening a bent point (above) and centering an off-center point (below).

stand the bar up with the point on the anvil face and spin it in . If it is straight there will be no wobble.

The four flat sides of the taper should be in line with the original flat sides of the bar and the taper should align with the original centerline of the bar. Any deviation should be corrected with your hammer at the anvil.

Targets:

Try to draw out and finish the taper in two heats. Beginners may take several extra heats.

Maintain a square cross-section in the taper. Check this with a square.

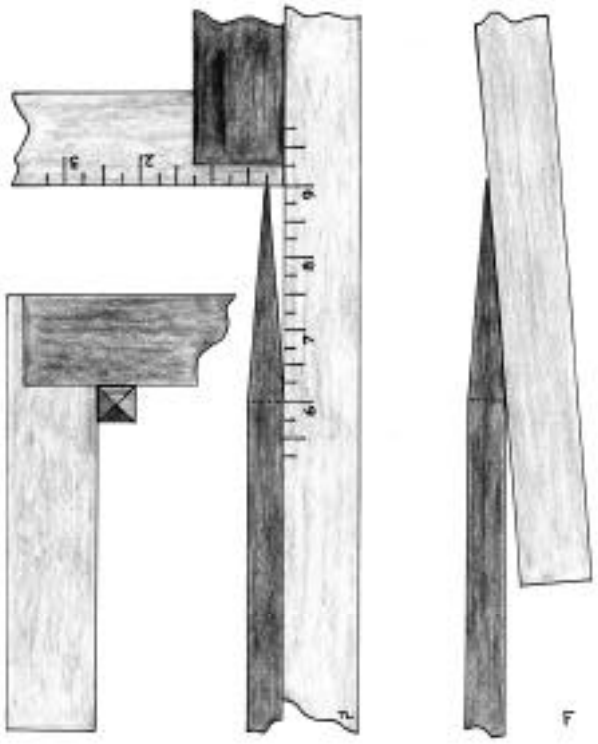
Hammer-finish with smooth surfaces and without discernable hammer marks.

Maintain a perfectly straight axis in the bar and in the 3" long taper. Check this with a rule and also practice sighting down the length of the bar until you can attain the same results by eye.

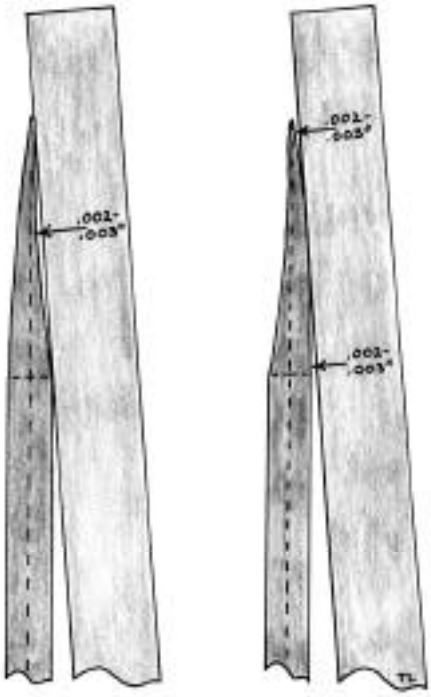
Measure your results using a square and a rule. The four flats of your taper should be straight within two or three thousandths of an inch, length within 1/16" and square in cross section. With practice you should be able to forge to this accuracy by eye. Repeating this exercise with care and attention will enable you to achieve these results quickly and consistently.

Forging Dynamics :

In this exercise, when the square bar is struck, it gets thinner top



Methods of measuring the dimensions.



Exaggerated deviations show how to measure goal tolerance.

to bottom but wider side to side. When you turn the bar 90 degrees and hit again, (you are restricting the spread of the bar, but allowing lengthwise stretch. Repeating this hit, turn, hit, turn sequence results in creating a taper. You are redistributing the mass of the bar with your hammer. As the bar become thinner it becomes longer. Notice that the thinner steel heats faster. It also chills faster. This is because there is less mass. Also note how much the bar you tapered has stretched in length.

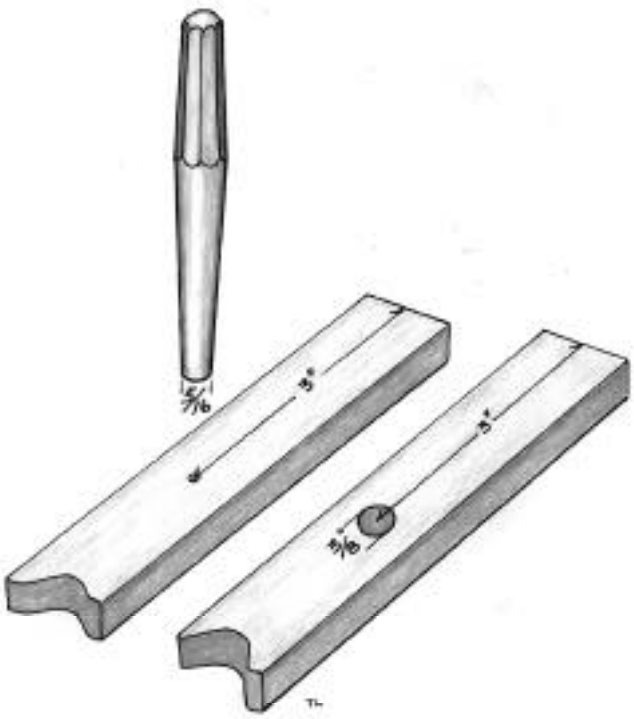
Lesson Two: Hot Punching

By Doug Wilson

Illustrations by Tom Latané

Lesson Number Two–

Create holes or recesses in bars or plate by driving punches into or through hot material.



Punching- layout and specifications

(Holes or impressions can be made any shape you can make a punch.)

Punch a 3/8" round hole through the center of a 3/8" x 1" bar with the hole's center 3" from the end of the bar. Drift (stretch) the hole to finished size.

The finished hole should be 3/8" round, with clean sharp edges.

The hole should pass through the bar at 90 degrees.

The wide surfaces of the bar should be flat with no discernible hammer marks.

The bar should remain 3/8" thick.

The bar will bulge out slightly on either side of the hole.

The original edges of the bar should be straight in line on each side of the hole and without any twisting.

Intent:

Students will learn to hot punch clean accurate holes and to check their results for accuracy.

Tools Needed:

Forge, anvil, hammer, round punch, center punch, square and ruler.

Materials:

24" of 3/8" x 1" hot rolled mild steel.

24" of 3/8" hot rolled round bar(to check final size of punched hole).

Method:

When working to a specific hole size, start with a punch slightly smaller than the finished hole size. After the hole is made it can be enlarged to final size by drifting (stretching) with the punch.

The Punch

The punch may be made of plain carbon tool steel at least 5/8" in cross section, forged to shape and normalized (air cooled until room temperature from a red heat). W1 or O1 drill rod, available at industrial supply shops, would be a good steel for this punch.

The business end of the punch should be a tapered round cross section 2 1/2" long, 9/32" to 5/16" round at its end and filed or ground flat with sharp edges after normalizing.

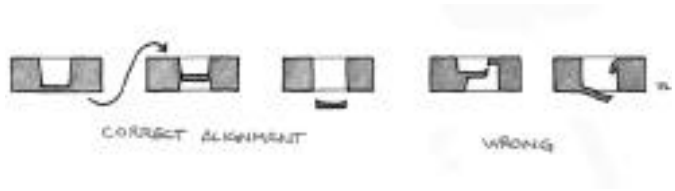
The top end should be tapered slightly to reduce mushrooming in use.

A hand held punch should be 10" to 11" long. A punch held in tongs should be 3 1/2" to 4" long.

Step One:

Make a center punch mark in the center of the bar 3" from its end. Take a bright yellow heat where the bar is center punched. Place the bar flat across the face of the anvil, center punch mark up. Carefully place the punch over the center punch mark. Strike a single solid blow to sink the punch into the hot bar. Make sure the end of the punch is still where it is supposed to be. Continue striking solid blows until the punch is nearly through; another

Some different styles of punches



Correct and incorrect alignment of the punch

two or three blows. The punch will feel solid against the face of the anvil. If you have done this quickly the bar will still be at a bright orange heat.

Hints:

Wear a glove on the hand that is holding the punch.

Quench your punch after every four or five blows. This will help to prevent the punch from deforming.

A few soapstone X-marks on the center punched side of the bar will help you get the punched side of the bar facing up when you first put it on the anvil.

Scraping the surface of the bar with your hammer will help you locate the punch mark. (Scale will fall into the punch mark leaving a small black spot.)

Learn to hit the punch directly and hard on the first blow. Avoid aiming blows.

The cold end of the bar can be supported on your thigh or on an adjustable stand set anvil high.

Step Two:

Immediately turn the bar over on the anvil. Look for slight bulges on either side of the hole and a dark spot where the punch was driven into the first side of the bar. Position the end of the punch exactly over the dark spot. Strike several heavy blows. You will feel the punch solid against the anvil face again. Move the bar, with the punch in the hole, over the pritchell hole (the round hole in the heel of the anvil). Strike one or two more blows over the pritchell hole and a small slug will be driven out of the hole. Now, straighten and flatten the bar with light hammer blows on the anvil face. (The bar should still show color during this part of the process.)

At this point you will have a hole. It should be a bit smaller than the desired size.

Notes:

If the punch doesn't clear the slug from the hole it is likely because the punch was misaligned when the bar was turned over or because the punch didn't have sharp edges on the business end.

The slug should be driven out from the second side of the bar. Avoid the temptation to turn the bar back over to the first side and try to drive the slug out.

Illustration of misaligned punch with slug hanging from one side of the hole.

Step Three:

Now you need to drift (stretch) the hole to the desired size. Heat the bar to an orange heat again if necessary. Place the hole over the pritchell hole, insert the punch and drive it in a bit further. Remove the punch, turn the bar over and drive the punch from the second side. Continue this sequence until the hole is just large enough for the 3/8" round bar to fit through easily. The drifted hole should be just a bit larger than the 3/8" round bar so that when it is cool the 3/8" round will still fit through the hole.

Hints:

When drifting, work a bit from one side of the bar and then from the other. This will make the hole more uniform in size. If you only drift from one side the hole would be wider on the top than on the bottom.

Finally, straighten and flatten the bar with light blows and a low heat.

Targets:

Try to punch and drift the hole and straighten the bar in one heat.

(Beginners may need a second heat to accomplish this.)

Check you results using the 3/8" round bar, a square and a straight-edged rule. The 3/8" round bar should just fit through the hole you punched. The hole should pass through the bar at 90 degrees. The bar should be flat and uniform in thickness. The bar should be straight and without twist. The surfaces of the bar should be smooth with no discernable hammer marks.

Forging Dynamics:

The flat bottom of the punch pushes the steel beneath it outward as it is driven into the hot bar. The sides of the bar bulge outward slightly.

When the bar is turned over and punched from the second side the sharp edges of the punch end shear out a small slug.

Driving the punch further into the hot bar stretches the hole larger, increasing the bulges on either side of the bar.

Steel expands when it is hot and shrinks as it cools. When hot, the drifted hole should be just a bit larger than the 3/8" round bar so that when it is cool the 3/8" round will still fit through the hole.

Chris Winterstein's Ornamental Form

By Chris Winterstein and Brian Gilbert

The finished demonstration piece

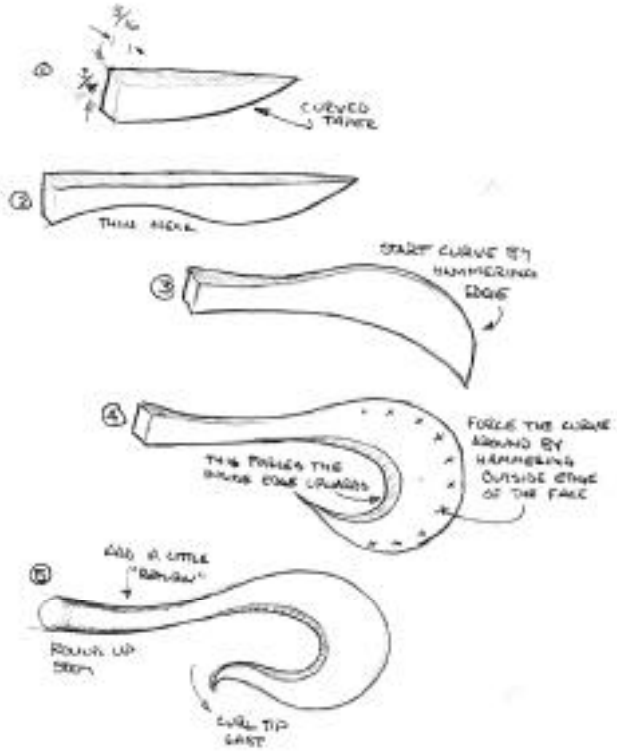
The recent Appalachian Area Chapter Christmas meeting was hosted by Bob Coogan and the Appalachian Center for Craft in Smithville, TN. Bob asked Chris Winterstien, shop manager for Penland school of Craft and ABANA board member to demonstrate for the event. True to the season, Chris demonstrated an ornamental form that consisted of a pair of forms that are similar to CoSira's blown-over leaf forms that would have several applications.(See *Wrought Ironwork: A manual of instruction for crafts - men*, published by the Rural Development Commission)

Chris was kind enough to share hisdemonstration notes for publication in the Hammer's Blow.

Steel has a trmendous potential to show line *and* volume. When forged, it moves in three dimensions. This scoll onament is an example of this, as the center edge bulges upward as it's curved… it's a visually interesting effect.

Start with rectangular stock that is approximately two times as tall as it is wide, for example, 3/16" x 3/8". The blank for the scroll tapers in two planes, and the taper on the tall section is curved. Finish the blank by necking down over the horn, as for a leaf stem. Keep the original thickness by hammering on the face of the anvil.

With a rounding hammer, thin the curved edge of the blank, leaving the thickness of the straight inside edge. This forces the blank into a curve. This also determines whether the blank is a lefty or a righty. Bevel from one side only– the side on the anvil will be the inside of the finished scroll.



Basic steps in forging the scroll

Chris Winterstein at the Appalachian Center for Craft

Starting the curve

True up the shape of the curve as desired over the horn. Inside and outside curves should be smoothed out now. Finish the scroll by working toward yourself, with the scroll off the edge of the anvil. As you curve, the center of the scroll will begin to bulge upward naturally. Be careful not to let too much curve occur at the neck, as the thin section will want to do.

Reverse the tip by hammering over the end of the horn.

Lastly, Chris usually puts a small "return" on the neck. This is accomplished by hooking the scroll over the horn with the tip down, and hammering downwards at the neck.

The major difference between this scroll and the CoSira is that the CoSira version doesn't have a neck. The book calls this a "blown-over leaf." This form is a little more delicate.

To create the ornamental form as Chris demonstrated, cut off the scroll at about six inches and scroll the opposite end. The scrolls shouldn't lie on the exact same plane, but twisted about 45 degrees when looking down the center of the stem. Finish the second scroll as before, then bend the stem in the middle to folt the scrolls back on themselves.Weld the end, and forge into a small hook for hanging. It makes a good Christmas ornament or pendant.

Flattening the outside face forges the center upwards

Gently tighten the curve and curl the tip

Drum Bellows from Zimbabwe

A drum bellows made from discarded materials

By Brent Bailey

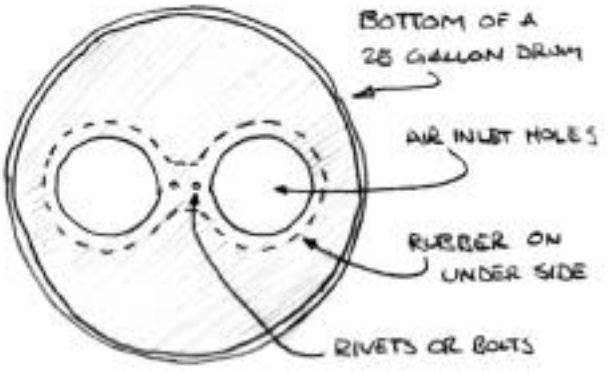
Drum bellows are inexpensive, work very well, and need no electricity. Their construction is simple and the material readily available. I don't know much about the history or the inventor of this particular style of bellows. I first used them while visiting Zimbabwe.

To build the drum bellows you will need the following list of materials

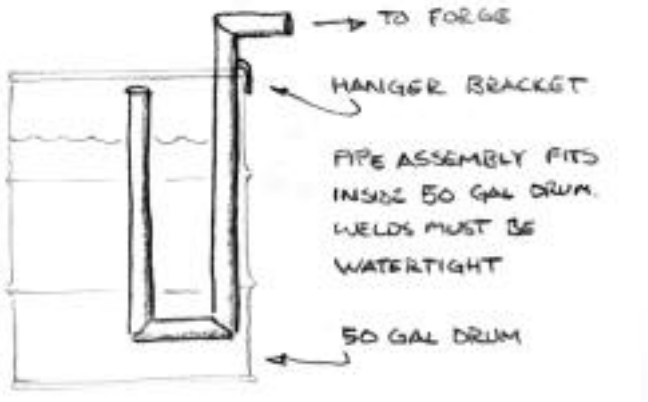
1. Two drums (50 gallon, 25 gallon)
2. Pipe (2 1/2 I.D.)
3. Angle iron.
4. Square tubing
5. Rubber
6. Water

Start by fabricating the framework and blowpipe. (Fig 1-3)

Next cut two holes in the 25 gallon drum to fit the rubber valves. (Fig. 4) Cut the rubber valves a larger diameter than the holes cut in the drum.



Air valve details on the 25 gallon drum

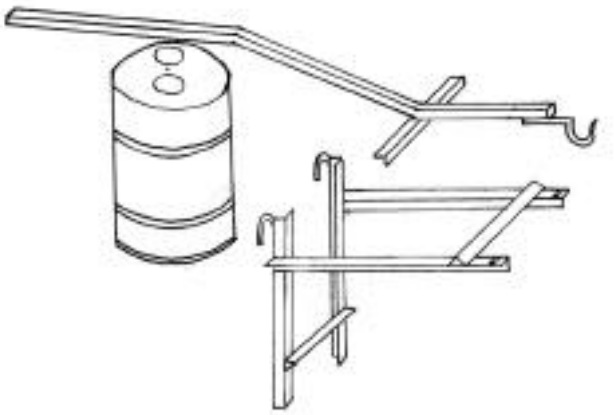


The air outlet pipe assembly

Assemble the bellows. Hang the blowpipe inside the large drum. Fill the drum about 1/2 full with water. Set the top drum in place and hang the counterweight.

The bellows work by creating air pressure. Pulling up on the handle opens the valves. Air is pulled through the open valves and into the air chamber. Pushing down on the handle closes the valves, traps the air between the top drum and the water, and forces it through the blowpipe to the forge.

Finally, be creative and customize your drum bellows.



Components of the drum bellows system

Jewelry in the Blacksmith's Shop

Some of the materials required for a damascus necklace

Part 2, By Brian Gilbert

In the last issue we looked at a few jewelry projectsusing forged silver and forge-welded cable. In this article, I'll describe further experiments combining silver, pattern-welded steel, and precious stones.

First off, as I said before, I'm no jeweler. Those of you who are jewelers will probably get a good laugh over the way I'm doing things. My point in writing this article isn't necessarily to teach correct jewelrymaking technique, rather than to show how some of the skills and tools you're already using might have interesting applications in other areas.

I've often seen damascus knives and thought, "That's more like a piece of jewelry than a knife…" which started the idea of combining damascus steel with silver and precious stone. The nearly matt grey of the damascus gives a nice contrast to the highly polished silver surfaces and reflections of the gem.

For this project, I used a black opal triplet, 14 x 10 mm (which is equivalent to 3.25 carats), shaped as an oval cabochon. A "cabochon" means that the stone is smooth rather than faceted, and a "triplet" means that the stone is constructed of three layers… a black stone base, a thin layer of opal, and a clear protective cap. With most stones, a triplet represents a cheaper way to get as much mountable material from a rough gemstone, but that isn't the case with opals. The color band in opals naturally occurs as an extremely thin layer of color that runs through a base of rock, usually either black or white. To expose the color band, the surrounding base rock must be ground away. The result, if done correctly, is a very thin, fragile slice of rock that reflects different colors of light (blues being the most common, greens and reds somewhat rarer, but often a combination of tones will occur in a single opal.)

The rock matrix that make up opals is very soft. To make opals durable enough to be used in jewelry and worn, they are often made into doublets (where the color band is glued to a thin slice of stronger base rock) or triplets. They are sometimes sold as "solid," but are so fragile that they are easily ruined in manufacture, or damaged when the finished jewelry is worn.

I bought three opals on eBay from the same seller in Australia. With shipping, they ended up costing about $27 each. I was very pleased with these stones, though the prettiest is an odd size… 8mm x 16mm… and will require a fabricated bezel to mount it.

Opals aren't the only type of stone you could use… malachite, amber, banded agate, paua shell, and Chinese oval turquoise could all be used to great effect, and are fairly affordable at anywhere from $1 to $16 per stone. Rio Grande is a good, high-quality source. (www.riogrande.com)

Start with the hard part

The design of this particular necklace started with a small piece of cable damascus. This was forged until an interesting shape started to suggest itself… similar to a knife point that was broken off the blade. I ground, sanded and etched this small piece to bring out the pattern.

Holding these tiny pieces of steel while finishing can get tricky. I forged several small, thin pieces, and glued them to an old board using five-minute epoxy. This way I could sand several pieces at once. The epoxy bond held the pieces fairly well, except for a few times when I let the piece get too hot… then the glue would let go, and the piece goes whizzing through the shop into a dark corner, never to be seen again. I learned that slow-speed wet sanding is required, even though it makes a mess. Using the sanding disks that I bought from A Cut Above saved me a great deal of time compared to hand-sanding, but of course, tiny bits of damascus don't go flying through the shop when hand-sanding… so you have to weigh saved time against lost pieces.

Another method that was suggested to me was holding the pieces with powerful rare-earth magnets, often available on ebay for about ten dollars. These magnets might be a little dangerous in

The finished damascus and silver layouts

The stone set in the back, damacus ready for riveting

the average shop… they're reported to be strong enough to break fingers, especially around the anvil… but they may serve well for holding these small pieces. I haven't tried this, though.

The pieces were sanded down to 600 grit, then etched with a 50% ferric chloride solution, also known as PCB etchant from Radio Shack. A light sanding with 600 grit after etching helps bring out the highlights of the pattern, and the finished piece was sealed with paste wax.

Now we need to use some materials from Rio Grande to complete the layout and back of the piece. A small piece of silver sheet (thicker is better than thin, and fine silver is better than sterling), 10mm x 14mm silver bezel cups, and some wire for riveting. Using one of the bezel cups as a pattern, I traced the outline with a permanent marker, then drilled and filed the oval outline for the stone.

This piece uses riveted constructed throughout for a couple of reasons… the biggest being I don't have a jeweler's torch and don't know much about soldering. But after going through the tedium of riveting this piece, I plan on teaching myself how to solder jewelry in the near future! I also reasoned that you probably don't own a torch either. But you'll discover, like I did, that if you enjoy this kind of work and plan on making more than one or two pieces of jewelry, it'll be a very worthwhile investment.

Some of this piece would have to be riveted, though… I'm not sure that steel can be soldered to silver, since the silver would melt long before the steel is hot enough to bond… so that brings us back to riveting and wire.

Probably the best way to size your riveting wire is to go to a good hardware store, buy five fine drill bits and a few feet of solid electrical wire. A #53 or #52 should fit a 16 gauge wire, while a #51 or #50 should fit a 14 gauge wire. The 14 gauge, while larger and more "clunky" looking, would be easier to rivet as opposed to the finer wire. You might also need a pin vise or fine chuck to hold these small drills in your drill press, depending on the condition of your chuck.

I imagine that this is the easier way, since I did it the hard way. I had a set of those carbide micro-drills that I thought I would use. I found some wire that looked about right, and chucked up an appropriately-sized drill bit. They did work, up to a point… they managed to get through the hard damascus… but they are extremely brittle and fragile. I broke two bits when they grabbed while drilling the soft silver. A drill press is essential to hold the bits and workpiece still, but I believe regular machinist's numbered drill will work better.

The silver backing needs to be cut out and finished next. I traced the outline of the damascus onto the silver, allowing about 1/8" extra all the way around. Snips could work here, but they would need to be high-quality and perfectly sharp… otherwise the soft silver would deform too much at the edges. I cut mine out with a chisel, smoothing the ragged edges with sandpaper. The right way to cut this will be with a jewelers saw frame and fine blades… again, a worthwhile investment if you plan on making more than two of these.

The silver sheet that the back is made from comes dead soft. I hardened the finished back by lightly peening the surface all over with my smallest ball-peen hammer, then finished by buffing on a felt wheel.

Next comes drilling and assembly. First the bezel cup was positioned on the backing and secured with a tiny drop of five-minute epoxy. When this cured, I drilled three tiny holes and riveted the bezel cup to the back. This was extremely fussy work, and would be much better if the joint were soldered… but it can be done this way if necessary. Rivet like you normally would… leave no more than one diameter of the wire above the surface and hammer. A small punch gets the rivets inside the cup without the risk of crushing the sides.

Now set the stone. A special tool called a bezel pusher is available from Rio Grande, and I'll get one next time,but for now a piece of steel or hard wood will do. You simply bend the sides of the cup over the stone, working around the edge until the stone is secure. Work slowly, bending a little at a time.

When the stone is held in the backing, you can rivet the damascus. Again, I used a drop of epoxy to position the drilled damascus over the undrilled back. When the epoxy cured, I ran the

The tiny bail on a piece of rivet wire

bottom corner through with the drill and riveted. The hammering can often force the damascus to drift out of position, so check carefully before you frill the second bottom hole. The hole at the top is drilled and riveted last, and this hole holds the bail for the necklace.The bail is bent out a tiny strip if flat silver which is then drilled. Here's where I broke my second bit… the tiny piece is nearly impossible to hold. It might help to form the bail on the end of a larger strip of silver, drill the hole, then cut it off. Of course, here's another good place to use a jewelers torch.

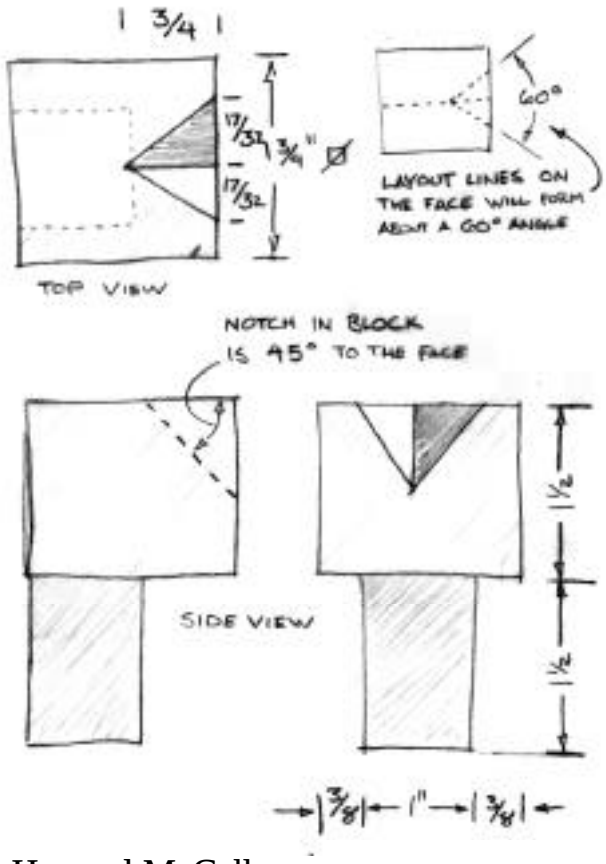
Riveting in the bail proved to be the most difficult. It may help to insert a wire through the bail to prevent crushing it, which I did, while riveting over a sharp corner of the anvil. If you do, it can be bent back to shape.

All that remains now is the general cleanup. I had some silver chains to use on this project which happened to match nicely.

A pair of earrings could be made using the same technique, though naturally requiring twice the labor. They would also need to be smaller and lighter, adding to the difficulty. But I'm pleased enough with my first attempt at jewelry in the blacksmith's shop that I may just get crazy enough to try it!

The finished project

A Bottom Swage for Faceting Knobs

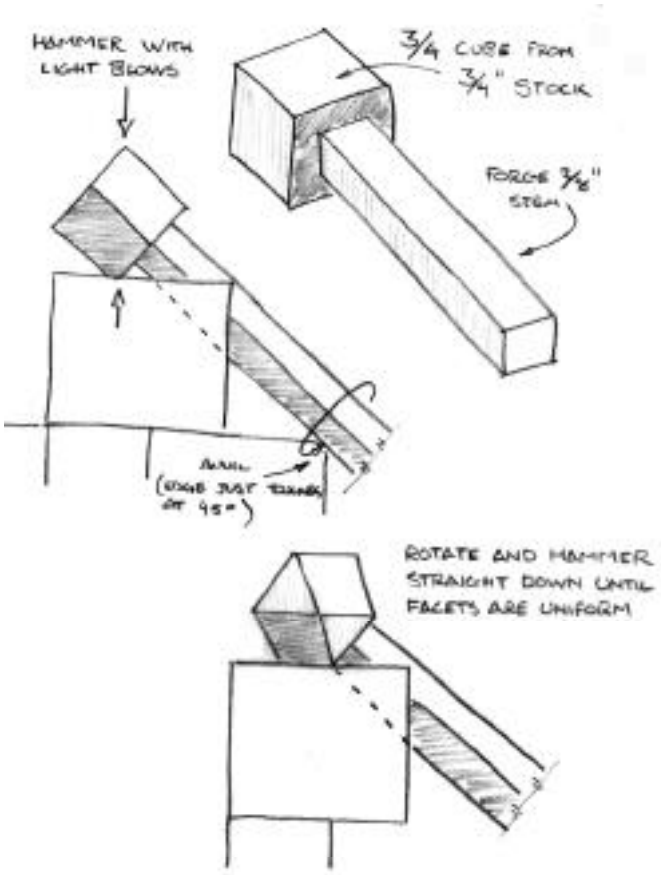


By Howard McCall

EDITOR'S NOTE– I recently received several drawings by Howard McCall via Bob Bergman describing a tool to assist the smith in forging faceted or round knobs on the end of a bar. I spoke with Howard by phone about his design, which is quite clever, and as Howard reports, very effective. By helping to rest the stock at a constant 45 degree angle, the knob ends are much more easily kept in alignment.

Howard made his tool by cold-sawing the notch with a power hacksaw. The layout lines for these cuts must be carefully made for an accurate block. They can be approximated with a 60-degree angle, or they can be laid out by measurement.. I had assumed that this block was made hot with a V-block and a treadle hammer, welding up a special top die of 3/4" square bar welded on edge, but Howard told me this was not the case.

One consideration is clearance. The block must be tall enough, and the hardy stem offset enough, that the forged stem of the ball(3/8" square in the drawings, but it could be any size) doesn't hit the edge of the anvil nearest the smith when held at 45 degrees. In fact, it might be helpful if the anvil edge just touches the stem when held at the correct angle, thereby supporting the stem with an additional point of contact. The position of the hardy stem could be determined by trial and error, moving the notched block in and out until the correct position for the stem is found, then marking and welding the stem. For me at least, this would be a tricky weld involving a bit of luck, so maybe you should spot weld and check with a 45 degree triangle to see if it's welded correctly. Otherwise, it would be better to err by welding the stem so the block lies too close to the edge of the anvil, rather than too far.



Blacksmithing Revival in Texas

By James Honig

October 2002 marks the 20th anniversary of the blacksmithing revival in Texas.

It was in October 1982 that Francis Whitaker came to central Texas to conduct a railing workshopat Joe Pehoski's shop in Saledo. Joe invited twelve smiths to be a part of this great event. We did not know of Francis' fame or his love to teach blacksmithing and his desire to pass on his knowledge of the profession. However we were all eager to learn what he had to say. Most of us camped out under the stars until a rainstorm moved us into the building.

Our mission was to learn how to build a railing for a curved retaining wall and a stair rail. Francis taught us layout, correct railing height, how to forge tenons, and how to have all the balusters the same length. He taught us how to figure spacing, make scrolls, collars, punch holes, riveting, and assembly.We had six forges and enough anvils for each smith. He also taught us how to layout stair rails. We made the curved railing and the stair railing, and installed both!

The workshop was a great learning experience for all. It gave us the basic knowledge for each step, and our confidence grew. Many of us still use this basic knowledge today. We are all truly indebted to Francis for this workshop.

Shortly thereafter we started to meet several times a year, in Austin and at Perry Cann's shop in Florence, Texas. It was at his shop under a large oak tree that we formed our blacksmithing group… the Texas Artist Blacksmith Association. Soon we had smiths from Dallas, Houston, San Antonio, Austin, and points between.

The geographical area of texas is so large that as time went on, groups formed in Dallas (the North Texas Blacksmith Association), in east Texas, in Austin, and lately in Houston (Houston Area Blacksmiths Association) as well as in central Texas (Central Texas Blacksmiths Association).

There is a regional event in Dallas in June of the off-year of the ABANA conference. We also have nationally known guest smiths at the January Hammerfest in central Texas, and a September weekend event at the Boy Scout ranch in Ft. Worth. Our major events are well attended, Recently we had Terry Clark from England to demonstrate for us at Texas A&M University.

We are growing in numbers and knowledge, and sharing information with each other. Several of our members have been and are ABANA officers.

As we look over the last twenty years and see the growth and enthusiasm in each group, we are thankful to all who have worked so hard… thanks to Joe for hosting that first workshop, and above all we are indebted to Francis Whitaker for his enthusiasm to teach us.

I wish continued growth and success to all of our Texas blacksmith groups.

Sincerely

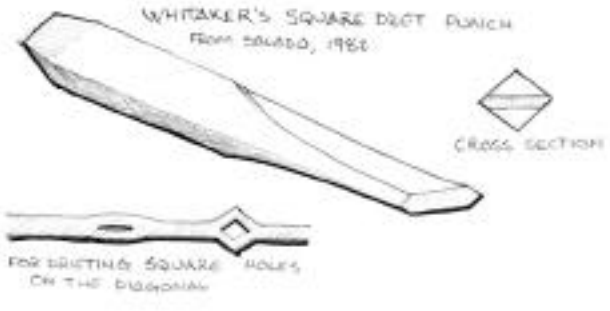
James Honig, founding member TABA

Francis' Square Drift Punch

From *Whitaker at Salado*, the Anvil's Ring, Summer 1983

Make the drift punch the same size as the material to go through the finished hole if a drive shrink fit is desired. Clearance is provide , it desired, by upsetting the center of the drift punch. A square drift punch for square holes made on the diagonal is forged by flattening the corners of he stock to form a long tapered flat-ended tool having the transverse axis aligned with the tool corners. Drift punches can be made from low carbon steel which is quenched. Do not quench the striking end. Low carbon steel drift punches are very serviceable. Generally, short drifts are easier to use than long drifts, since they do not wobble as much.

Francis took special care when hot cutting the material for the drift punch.



Quad-State Round-Up

By Brian Gilbert

The annual Quad-State Round-Up has long been one of those not-to-be-missed events in the blacksmithing community, and this year's event was certainly no exception. Sponsored by the Southern Ohio Forge and Anvil, the event was blessed this year with good weather, and excellent line-up of demonstrators, and tons of tools for the blkacksmith. It's one of those rare occasions where you can leave lighter (in the wallet) and heavier (in the back of the truck) at the same time.

This years demonstrators were Tal Harris,Susan Hutchinson, Hank Knickmeyer, David Norrie, and Lawrence Smith. My big regret is not having enough time to see more demonstrations, but I greatly enjoyed what I did see, even if it was all too brief.

Next year's Quad State is scheduled for September 26-28 at the fairgrounds in Troy, Ohio.

A big part of Quad State is wandering around looking for bargains

The galleries were impressive… this is a forged copper flower by Bob Becker

Why is this man smiling?

Most blacksmiths love to play with heavy equipment…

2003

March

8-9 Bladesmithing Workshop hosted by the Jefferson County Historical Society, 9 A.M. – 4:00 P.M. at the historic village on North 27th Street, Mt. Vernon, IL. Cost: $20 both days, proceeds to benefit the Blacksmith Shop and Village.

28, 29, & 30 Furnace Town Blacksmith's Guild Annual Joint Meeting. Demonstrator and Workshop Leader, Fred Crist, Gichner Memorial Forge,Furnace Town Foundation-Living Heritage Museum, Snow Hill, MD. Send registration form and payment to: Mark Williams, 114 West Federal Street, Snow Hill, MD 21863 H)410-632-0914, (W)410-651-6431 <williamsiron@comcast.net> Contact Ray Noble for the Sunday workshop: Ray Noble, 27840 Oriole Road, Princess Anne, MD 21853 (H)410-651-0987, (W)800-220-3015 nobler511@aol.com

28, 29, & 30 Forging On The River, presented by the River Bluff Forge Council. Starts 7:00 PM Fri, 9:00 AM Sat and Sun. At the Nat'l Ornamental Metal Museum in Memphis, TN. Demonstrators will be Chad Gunter, Corky Storer, and Doug Hendrickson. Contact Richard Carr (901) 872-4009 or Ray Tanner (901) 682-9771

29 Tenth Annual Hammer-In at Pioneer Village, Scott County Park Long Grove, IA, from 9:00am until ? Demonstrator will Steve White of Skunk River Forge. Contact: Dennis Anderson, (563) 391-1985, Doug Heritage (563) 326-0530, or Bob Tuftee (563) 332-4800

April

26-27 Spring Fling, Warrenton, VA (BGOP)

May

3-4 Appalachian Blacksmiths Assn. Spring Conference; Peter Happney, demonstrator Location: Cedar Lakes Park, Ripley, WV. Contact: ABA website: www.appaltree.net/abaor Dave Allen, Editor 304-624-7248. Email: anvilwork@aol.com

2-4 NOB Hammer In, Auglaize Village, Defiance, Ohio. Demonstrator will be Jim Tyson, Lead Blacksmith at Rose Metal Industries, Richfield, Ohio.

15-17 South Eastern Regional Blacksmithing Conference in Madison, Georgia. For more information contact Barry Myers, 2003 SERBC Chairman, BLMYERS647@netscape.net

18-19 Blacksmith Days May Westminster, MD (BGCM)

30 -June 1 IronFest Blacksmithing Regional Conference, Grapevine, Texas. http://www.iron-fest.org/. The conference will feature Toby Hickman, David A. Court, Susan Hutchinson and Mike Pearce. For registration, contact Verl Underwood, 613 N. Bailey, Ft. Worth, TX 76107-1005; (817) 626-5909, <vaunder@aol.com>.

30 -June 1 Northeast Regional Conference, "Age of Iron," Hancock Shaker Village, MA. Connecticut Blacksmiths Guild, New England Blacksmiths, Northeastern Blacksmiths Association, Berkshire Blacksmiths, and others will hold a multi-affiliate two day conference with several simultaneous demonstrations and workshops at this inspiring location in the Berkshire hills. More information at www.newenglandblacksmits.com click events

June

7-9 IFGS Symposium and Exhibition in Germany. More info at www.ifgs-org.de, or contact IFGS President Matthias Peters, Tel: 00492402 25841

14 Rough and Tumble Blacksmith Day, Kinzers, PA (PABA)

July

10-13 CANIRON IV at Hamilton, Ontario. Our website is www.caniron.com. We have demonstrators from across canada and the states as well as from Great Britain. A warm welcome is extended to all to come "share our fire." For further information, contact Murray Lowe, (905)772-2474, fax (905)772-2475. Email: valleytownforge@aol.com. Website: www.caniron.com

Classified Policy: All ads are $20 per single insertion.Contact Sebastian Publishing for quantity pricing.

Books and Videos

"MOVING METAL, The Art of Chasing and Repoussé" by Adolph Steines, translated from German by Judy and Winfried Berger, is a, long- overdue treat for blacksmiths, jewelers, and all other metalworkers. No other text in English covers this subject in similar depth and detail. This unique, profusely illustrated reference work covers design transfer, chasing, repoussé, sinking, raising, surface treatment and much more. Hardback, 8x10, 131 pages, 218 photos/drawings. Prepaid: Blue Moon Press, Blue Moon Rd., Huntingdon, PA 16652. $32.95 plus $3 S&H. Pennsylvania residents add 6% sales tax. E-mail: books@bluemoonpress.org. MC/VISA.

"A Blacksmithing Primer, A Course In Basic And Intermediate Blacksmithing" by Randy McDaniel, ISBN 0-9662589-0-8. A text book with over 20 projects and more than 400 step-by-step drawings with simple text. Spiral bound 8-1/2"x 10", 174 pages. Dragonfly Enterprises, 3283 State Hill Road, Dept. HBC, Sinking Spring, PA 19608. $25book plus $3 shipping and handling. PA residents add 6% sales tax or on the web at www.drgnfly4g.com.

Over 700 high-resolution digital pictures are available as a set of 3 CD ROMs. These JPEG pictures are shot with a Sony MVC-CD400 camera at 4megapixels resolution. $25 to Gerald Pollard, 14309 Friendswood Ln, Austin, TX 78737. All profit goes to Balcones Forge of Central Texas.

Blacksmiths Positions Available

Artist Blacksmithing Certificate- Unique in Canada, this program explores traditional and contemporary metal work for the home and garden. Credits include basic and advanced blacksmithing, art history, drawing, design, applied design, and portfolio preparation. Inquire about other Art Certificates and part-time courses offered in a wide variety of media. To find out more, write to the Haliburton Campus of Sir Sandford Fleming College, Box 839, Haliburton, Ontario KOM 1SO. Call(705)457-1680, fax (705)457-2255, E-mail: info@flemingc.on.ca or visit our web site www.flemingc.on.ca

Equipment For Sale

B3 Nazel pneumatic hammer. Excellent running condition. $14,000 + shipping. 300# chambersburg, B2 nazel 165# all are in excellent running condition. Air bending table 1/2" round. Buzz heating oven L.P new. 850 degree, 8"Hx12"Dx48"W . 9260 tool steel 13/16 Rnd .20 pr #. W1 Rnd .50 per #. Iron bars 3/4"x6' .50 #. Ph 920-987-5681 or email grewe@dotnet.com

Remote foot pedals, self locking wedges, quick change die conversions, and more. Lander Tool and Die is your source for improved power hammer productivity and efficiency. Hammer specific and custom applications. 209-296-6471

European double horn anvils– Check out this new website: www.euroanvils.net. Habermann anvils, 460#, $1100. 260# Peddinghaus style, $610. More sizes and styles. Stephen Feinstein, 1-931-381-4663

FOR SALE/CLASSIFIEDS

For Sale or Trade. 5 Little Giant 25# and 50# hammers $650-$1950. Hand-crank steel tire roller $275. 4 large ring cones (old, not repo's) $300 and up. Several good anvils 150# - 300#. Trade for old marked saddles, bits, spurs, chaps, Henry and Winchester rifles, silver parade saddles. 260/724-9618 or cell phone: 260/413-0626

250 pound Little Giant Power Hammer, Excellent Condition 7-1/2 H.P. 3 phase motor, flat dies, spring guard and brake, new toggle links and knuckles, base available $5500.00. Located in Virginia. (540) 837-2260

Old World Anvils offers new fly presses, new high-carbon anvils from the Czech Republic at 6-552 lbs, single or double horn, Peddinghaus anvils, new all-steel post vises, gas forges from NC Tool and Forgemaster, and a wide variety of hand tools, chisels, and sledges. Dan Morris, email dan@oldworldanvils.com, (479)631-7823. 908 Lakeview Dr, Rogers, AR 72756

Blacksmith nylon flag 24" x 33," large black anvil on red, blue, yellow, purple, bright pink or green background. $25 plus $5 priority shipping. David R. Goodrich, 20460 E. Austin Rd., Manchester, Mi. 48158, 734/428-8147, e-mail: goodrich@tln.lib.mi.us

25-lb. Little Giant, many new parts, $2500 OBO. 2 x 72 belt sander, $250. 75-lb. NC anvil, $200. Jeff Wallace 505/473-5405.

Guillotine fullers for sale. Built by Brian Gilbert, these are slightly improved versions of the fullers shown in Vol8#1, Winter 2000. Cold rolled dies and die guides allow tighter registration. Includes 1 set of 1/2"x 1 1/2" flat dies. $50 plus shipping ($12 in the continental US) Brian Gilbert, 3404 Hartford Dr, Chattanooga, TN 37415. email Hammerguy@mindspring.com

Anvils for sale - $350 each: Hay-Budden, 101 lbs. Peter Wright, 104 lbs. Sean Spain, 5301 Merced St., Des Moines, IA 50310. 515/278-1064.

Post Vise, 5 inch (good) and 2 post drills (in need of some work).All for $100 No name on the vise but it was a pretty nice one with a fancy tail cone. Have 2 that I use and just don't need it. Must be picked up in N. FL. 70 mi W. of Jacksonville. Must take the drills too. Greg Sefton, 7824 31st Rd, Wellborn, FL, 32094 Phone: 386-963-2039

Nazel 2B, 1-piece frame. 7.5 hp, 3-phase, 3.5" x 7" flat dies, new bearings and rings. Rebuilt and ready to work. $16,000 FOB Wisconsin. 608/527-2494.

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Country :

Type of Membership ☐ New Member ☐ Renewal

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☐ Student - $35.00 ☐ Library - $35.00

☐ Senior (65+) - $40.00 ☐ Overseas Air - $80.00

☐ Overseas surface - $60.00

ABANA Chapter Affiliation: _____

Application may also be made at the ABANA web site: www.abana.org

Credit Card Information

☐ Visa ☐ Mastercard Expiration Date: _____

Card #

Submit check, money order (U.S. banks only), or by credit card:

LeeAnn Mitchell
P.O. Box 816
Farmington, GA 30638

Phone: 706.310.1030
Fax: 706.769.7147

MEMBERSHIP APPLICATION