New Jersey Blacksmiths Association
"EAGLE"

N.J.B.A. Newsletter

NJBA Volume 17, Issue 3 02/02/13
http://njba.abana-chapter.com

Editors Soapbox

For those who are wondering, we are an issue short this volume. Hurricane Sandy did it's thing to us when I was getting the last issue together and I just couldn't get started and make time to do it till now.

Things were a mess here on Staten Island and many near the shore areas know what I mean. Many of those inland were affected as well with power outages and flooding. I lost a bunch of tools, forges and welding equipment, but I got off easy compared to some folks near by me who lost everything, some their lives.

Enough of that, now on to NJBA business. We have some good meets set up with opportunities to learn, forge or teach others what you know. Come out and chat or get your hands dirty! Let's boost the attendance at the upcoming meets. If you are interested in helping or have an idea for a workshop for tools or other shop equipment please contact one of the board members listed on page 2.
Larry Brown, Editor

Upcoming events for 2013

Get you calendars out and mark these events down. Please bookmark our web site and check for updated meet information. Remember most of our meets have an "Iron in the Hat" drawing, so be sure to bring something. Meet information starts on this page and continues on page 3.

March 23rd, Saturday—Anvil Repair Workshop, at Marshall Bienstock's shop . More info below.
April 6, 2013, Saturday, -- Damascus Workshop. Mark Morrow in charge, limited spaces!
April 16th Sunday, Spring Meet at Peters Valley Craft Center, Demonstrators and lunch! Meet is open to all members from other groups.
May 19th, Sunday -- Tuckerton Seaport.
September 15th -- Red Mill Picnic

Saturday March 23rd, Anvil Repair Workshop, at Marshall Bienstock's shop

For $120 and some sweat labor you get your beat-up old anvil repaired with freshly welded, ground and polished edges. This is a workshop. Anvil owners are participants, usually meaning you will be assigned a task such as grinding, etc. Anvils missing chunks of the face badly swayed or otherwise abused can also be repaired, but will require more preparation, labor, and money on your part.

The workshop will take place at Marshall Bienstock's shop in Howell NJ. Prior registration is required so we can have the proper amount of supplies on hand - please provide the approximate size of your anvil. Pictures would help determine the amount of work required. NJBA has run a similar workshop on several occasion with tremendous results. (Open to members only, but anyone may join NJBA on the day of the event.)

The contact persons for this event are: David Macauley, drmacauley@att.net, 732-206-1568 H or 732-310-1300 C
Directions on page 3.

Renew Your Membership!
If you have not renewed, this is probably your last newsletter!
Send in the renewal soon! Use last page of this newsletter.

The NJBA Web Site!

The NJBA Web Site is:
http://njba.abana-chapter.com/

The Newsletter is at:
http://www.lightningforge.com/njba/index.htm

or use the link on the NJBA web site for the newsletter.

Official NJBA Address

NJBA
P.O. Box 224
Farmingdale, NJ
07727-9998

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

NJBA Board of Directors

Directors available on hard copy

Directions: Marshall's Farm

Marshalls farm is at 663 Casino Drive, HowelI (Monmouth Co.). NJ. which is about 1/4 mile east of Route 9. Casino Dr. is a few miles north of 1-195. and a few miles south of Rte. 33. Either of these routes can be easily reached from the major north-south highways. including the Garden State Parkway. the NJ Turnpike. 1-195. Rt. 18 or Rt. 34. Marshall can be reached at his shop at (732) 780-0871.

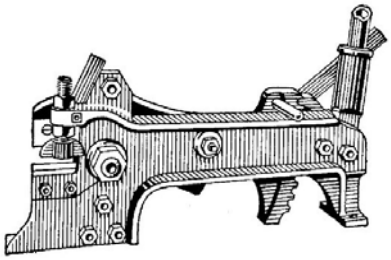
Damascus Workshop With Mark Morrow

On April 6th at Marshalls Farm, Howell NJ

This will be the fourth running of damascus steel class for knives or specialty tools led by Mark Morrow (http://www.swordsmith.net/). This will be a beginner level class. We will be making a simple pattern bar of folded steel in both gas and coal , coke forges, tools and forges will be provided. Attendees will need to bring leather gloves and safety glasses. 4 ½" angle grinders with extension cords will be helpful. The patterns will be twist , ladder and random , also covering types of steel to use , grinding methods and heat treat of finished blades and how to bring out the pattern in the steel.

The cost is $100 per person ($75 basic fee + $25 for materials) payable to New Jersey Blacksmith Organization). Open to members only, but anyone may join NJBA on the day of the event. The cost for membership is $20. To be held at Marshall Bienstock's shop. Mark's email address is swordsmith201@verizon.net and also the shop phone 732 -4585823.

Directions above



Saturday, April 16th
A Kick out the Winter and start the Spring Meet!
Members from the NJBA, NBA, NEB, PABA and Berkshire Blacksmiths and other interested people are invited to attend!

The NJBA has set up a spring meet in Layton, New Jersey, hosted by the Peters Valley Craft Center. The teaching studio at Peters Valley is equipped with nine forges and anvils plenty of room for people to play during the day. Demonstrators will be announced later or spontaneously occur.

Hoping you'll all come. Don't forget to bring something for iron in the hat. We are also encouraging PABA, Berkshire and NEB members to attend. This should be a fun Saturday for everyone tailgating encouraged.

There will be a $2 fee to help cover lunch expenses.

Dick Sargent
Dept Head Blacksmithing
Peters Valley Craft school
Layton, NJ 07851

Tuckerton Seaport, May 19th Open Demonstration

On Sunday May 19 NJBA will be doing a demo at Tuckerton Seaport, at their Annual Bluegrass & Barbeque Festival. We did this event a few times before and always had a good time. So come on down, or up, depends where you live, and spend some time with us. Do a little blacksmithing, enjoy the music the food and the seaport.

Set up time is around 9:00 am . To get to the seaport take the Garden state parkway to Exit 58 Rt 539 go east or follow the signs at the top of the ramp to Rt 9 (Main st) in Tuckerton make a right the seaport is on the left. Hope to see you there.

For information on the seaport go to www.tuckertonseaport.org

Old Time Engine Show at Washington's Crossing Park

September 14—16th
NJBA members demonstrated at Washingtons Crossing Park in Titusville, NJ over this weekend. We want to thank John Chobrda for once again bringing his trailer and forge to the event. I stopped down for the Saturday afternoon section of the weekend. I walked through the flea market section first, but didn't find many bargains this time, got a leg vise, and then checked out the antique engines that were set up. If you have never attended the show the whole field is full of antique trucks, heavy equipment, antique cars, tractors and a large area full of early "one lung or hit and miss" engines many of which are set up running other antiques such as log splitters, washers and butter churns to name a few.

Leonid Karelshtayn

I know there were others but I'm sorry I didn't get more pictures to help me remember

Dan O'Sullivan

Report on Red Mill Hammer-in

I was there and didn't take notes, but I remember it was a nice day with a good amount of venders. In side the shop we had several demonstrators including Leonid Karelshtayn, a Ukrainian smith who demonstrated for us last year and Dan O'Sullivan.

Report on Walnford Day

By Bruce Freeman

Although only overcast in the early morning hours, the weather forecast for Walnford Day was bleak, with rain expected most of the day. Eventually, we decided we'd be free of significant rain till 2 PM or so, so Marshall, David M. and I converged on Marshall's farm, loaded two vehicles with equipment and trundled off to Historic Walnford in Crosswicks Creek Park.

There were already some vehicles in the parking lots when we arrived, but most of these seemed to be rangers and demonstrators. We met Jose Torres when we got to the site, and the four of us set up the equipment -- one forge, two anvils, and a vise, all under an EZ-Up fly. The park staff provided stanchions and rope to ward of the massed multitudes, and a table for demo pieces.

Attendance was low compared to what would be expected on a sunny day, but the rain eventually stopped and it almost got dry in the afternoon. Bill Ker stopped by for a visit and schmoozed for half an hour or so. We took turns at the forge. When I got a turn, I made a rough imitation of the shutter dogs on the kitchen of the Waln house. Later, Marshall made the drive stud for the dog and headed over the tenon to mount it. Jose made a ring and pin to fasten kilt fabric in place. Simple but very nice. David was producing some leaf key ring rings - the kids all love them as give aways.

While not forging or schmoozing, we spent our time visiting the mill, the house, and the barn with their demonstrators showing carding, spinning, weaving, music (recorder and harpsichord), calligraphy, paper marbling, and wood carving. We took advantage of the free (donation encouraged) food and coffee to supplement the lunches we'd brought out on this chilly day.

Report on the Holiday Party, Sunday December 9th, Marshall and Jan's house.

The holiday party was held on December 9th, 3PM at Jan and Marshall's house. Many thanks again, to Marshall and Jan for opening their home to us in the holiday season.
We had a great turnout and a large variety of foods and desserts. A good time was had by all.

Little Giant Rebuilding Class

March 22-24, 2013

This 2 ½ day class is a hands-on format. You will help transform a 25 LB Little Giant hammer from functional but sloppy condition into a well tuned, quiet, hard working hammer. The class costs $95, refundable up to 7 days prior to the class; advance registration is required. We limit the class to 25 participants. The last 2 years the class has filled up by the end of January. Please call or email if you have any questions, or prefer to register by phone. You can reach us at 402.873.6603 or lgiant@windstream.net

Northeast Blacksmiths Meet With Frank Turley

The Northeast Blacksmiths will have Frank Turley as their demonstrator for the Spring Meet. The dates are May 3rd, 4th and 5th. The meet is at the Ashokan Center in Beaverkill, NY just west of Kingston. There are sleeping accommodations and food as part of the price for the event. For more information see the web site; www.northeastblacksmiths.org or contact; President: Jonathan Nedbor, 496 Tow Path High Falls, NY 12440 Phone:(845) 687-7130, jonned@hvc.rr.com

More info and registration to be posted on web site soon!

ABANA Convention

The first ABANA Convention will be held at: the Historic Westville Village in Lumpkin, Georgia and at the Convention Center in Columbus, Georgia.
For details:
www.abana.orgConventions/2013Convention.shtml
The cost is just $95.00 Don't miss it, On-Line Registration closes March 9, 2013 - Walk-Ins will be accepted at the Event but will be limited to available space and will incur a $25.00 late fee.
To Register:
https://events.r20.constantcontact.com/register/eventReg?llr=j4lpjhcab&oeidk=a07e6bi6ifq5d6cd6cb

Alex Bealer's Anvil Raffle
at the 2013 Convention

To help celebrate this historic occasion Founding ABANA Member,Ivan Bailey has donated Alex Bealer's Anvil To be Raffled of at the close of the Convention
This is the anvil that Alex used while writing his book. The Anvil is a 101 Lb Peter Wright
Want to own Alex Bealer's Anvil?
www.abana.org/Conventions/2013AnvilRaffle.shtml

More information can be found on the ABANA web site; http://www.abana.org
ABANA Central Office
Phone: (423) 913-1022
Fax: (423) 913-1023

Artist-Blacksmith's Association of North America

ABANA is pleased to announce that it's next biennial conference will be:

13-16 August 2014 in Harrington, Delaware at the Delaware State Fairgrounds.

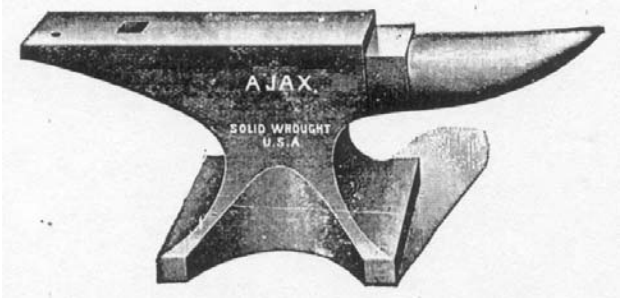
The facilities at the fairgrounds ar well suited to our needs and being located in the middle of the East Coast puts it within a day's drive of 1000's of our members. It's also within 2 hours of the major airports of Washington, DC and Philadelphia, PA

ABANA 2014
Joinery: Come Make Connections
13-16 August, Delaware State Fairgrounds
Harrington, Delaware
The Conference is over a year and a half away so other than the location there's not a lot of details to tell you, but that's good because there's still time for you to tell us what you'd like to see. Please fell free to contact myself:

Bill Clemens billclemens@abana.org
570-239-6439
160 2nd Street, New Columbia, Pa, 17856
Or Co-Chair:

David Hutchison davidhutchison@abana.org
410-310-3347
31834 Geib Road, Cordova, Md, 21625

Joinery: Come Make Connections



Blacksmithing Workshops and Classes:

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

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

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

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

Brookfield Craft Center
286 Whisconier Road
P. O. Box 122
Brookfield, CT 06804-0122
203.775.4526

Open Forges

If any members have a forge at home and work in the evenings or weekends and want to open it up to help a few local guys, let me know, Larry Brown, editor, as we get requests from members who have a hard time traveling to some of the open forge locations.
Please contact, Larry Brown, Editor.
We want to encourage all to join us at:

Monday Night Open Forge in N.J.

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

Open Forge in Long Island

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

Business Members

We would like to thank those who joined with our new Business Membership category .
Business dues are $40
Please show them our support

Marshall Bienstock, Marshall's Farms
663 Casino Dr., Howell, NJ 07731
732-938-6577, 732-780-0871
jlfmib@optonline.net

John Chobrda, Dragon Run Forge
P.O. Box 315 Delaware City, DE, 19706
302-838-1960 jchob@verizon.net

Eric Cuper Artist Blacksmith
109 Lehman Lane, Neshanic Station, NJ 08853
908 642-6420 ericuper@msn.com

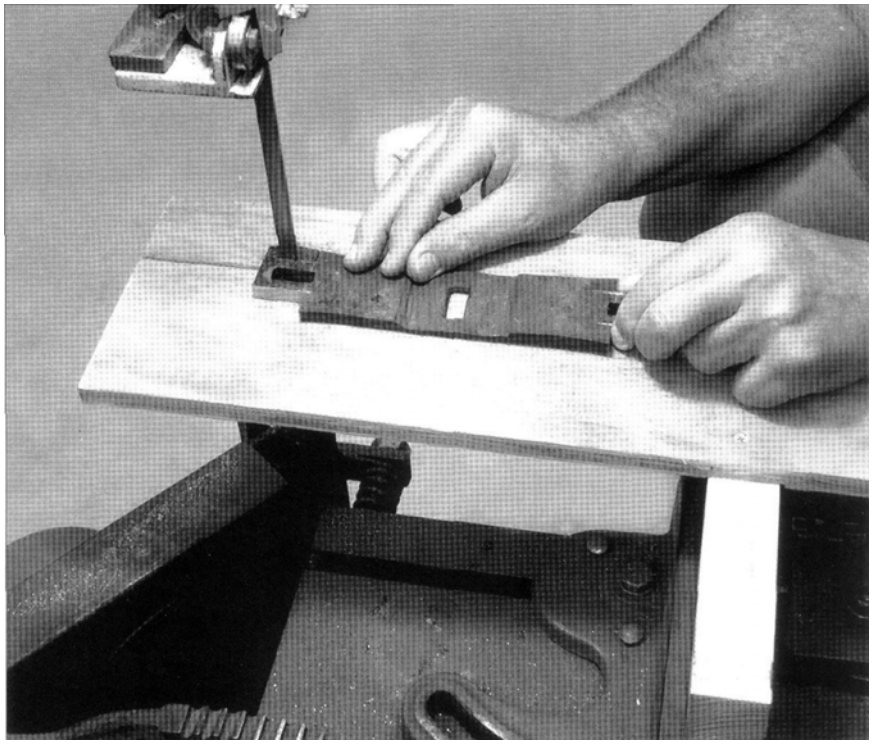
Bruce Hay, Jr.
50 Pine St., Lincroft, NJ 07738

In Southern NJ contact
Joshua Kuehne, 543 Amos Ave.
Vineland, NJ 08360
(856) 503-5297 iforgeiron88@yahoo.com

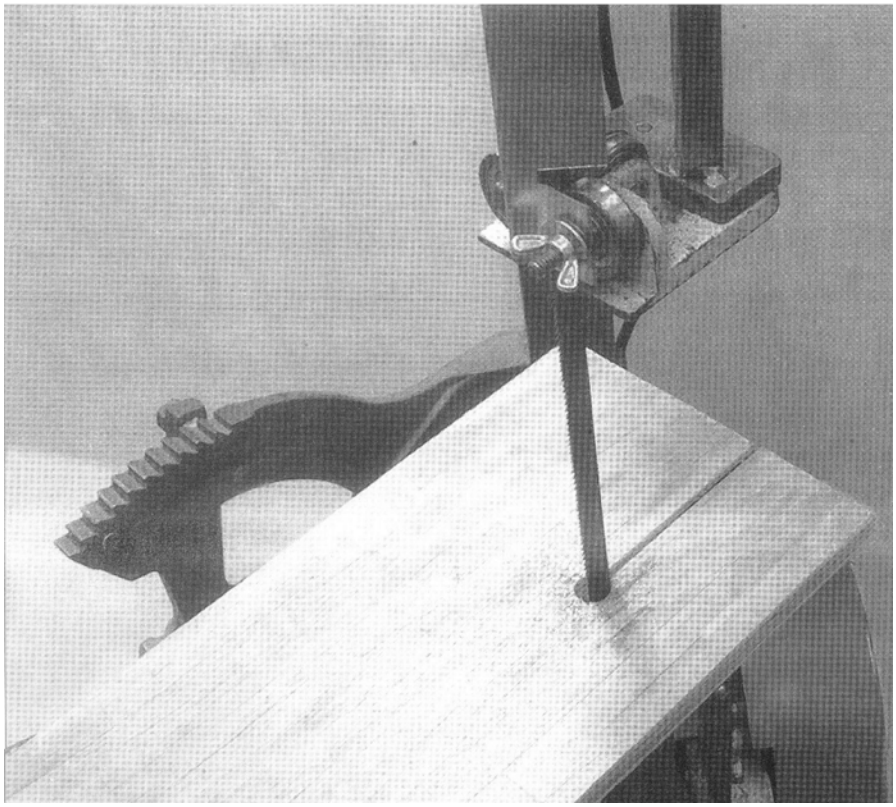
In Northern Delaware and Southern NJ, contact Kerry Rhoades or John Chobrda
Kerry (302) 832-1631 John (302) 838-1960
(609) 610-3501 (cell)

CHEAP TRICK FOR A METAL CUTTING BANDSAW

By: Tommy Ward



The blades on many horizontal bandsaws can be moved to a vertical position for freehand cutting, but operation in the vertical mode without some means of supporting the work can be difficult, with accuracy hard to achieve and a real possibility for broken blades and physical mayhem.



Like any other cutting tool, safe and effective operation of a bandsaw requires that the work be stable, well supported and properly aligned - none of which are possible when balancing a piece of stock on the diminutive blade guide plate of a horizontal bandsaw. The obvious correction for this problem would be to equip the machine with an auxiliary work table, however most saws I've seen don't have one, and even when available the auxiliary tables are often dinky little things that are ill-suited to supporting long or heavy stock and require some effort to install.

A recent project required

a number of accurate cuts to made in 3/8" flat bar, and necessitated that I devise a way to handle the work in a safe and comfortable manner. The solution I came up with is a table that is supported on one end by the saw's blade guide plate and held securely in place by the jaws of the vise. The beauty of this set-up is in its utter simplicity of construction and installation.

The project can be easily constructed from two pieces of scrap wood, with the work surface constructed of 1/2" - 3/4" plywood, and a support crossmember made from "two by" stock. Make the table whatever size you'd like; the only critical dimension being to cut the support crossmember to a height that will allow the table to lay level on the blade guide plate.

Easily constructed auxiliary work table improves safety and accuracy when operating a horizontal band saw in a vertical position.

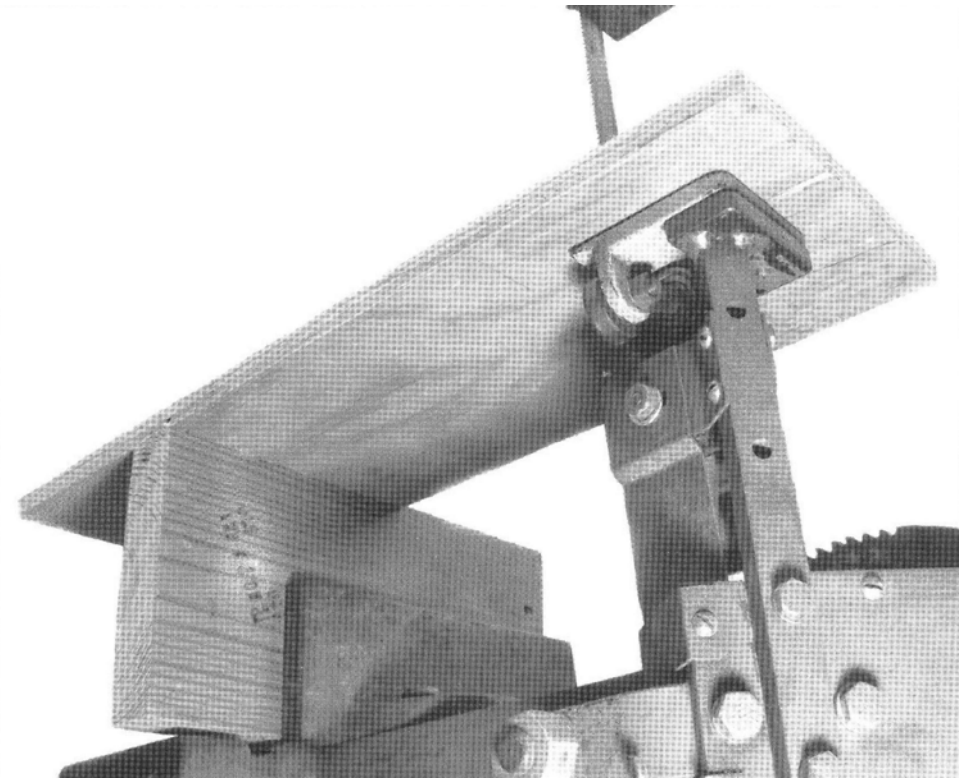
A thin kerf and clearance hole allow table to be quickly installed over the saw blade.

Cut a slit in the off end of the table to allow it to slide past the blade for installation and drill a clearance hole roughly the width of the blade where it passes through the table at the end of the slit. Then clamp the support crossmember in the saw's vise and mark its mounting location with the clearance hole properly positioned at the blade. I made a shallow dado cut across the bottom of the table and secured the support crossmember to it with carpenter's glue and a couple of flat head screws, but a simple butt joint would work too just make sure the crossmember is square to the kerf of the saw blade.

Installation is a snap - simply swing the blade assembly to vertical, slide the end of the table into position with the blade, and tighten the vise jaws against the support crossmember.

Underside view shows the auxiliary table supported by the saw's blade guide plate, with the mounting crossmember held firmly in place by the vise jaws.

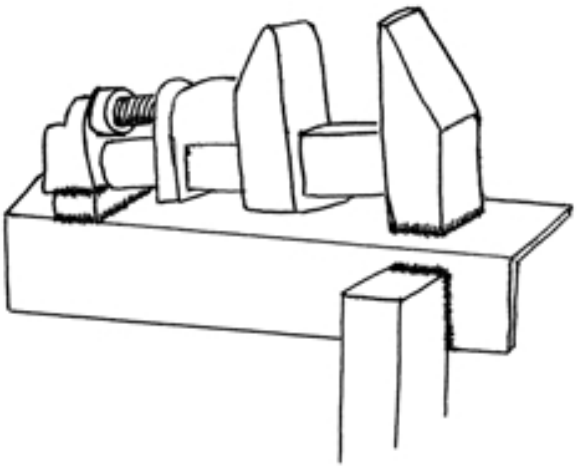
2009 Tommy Ward



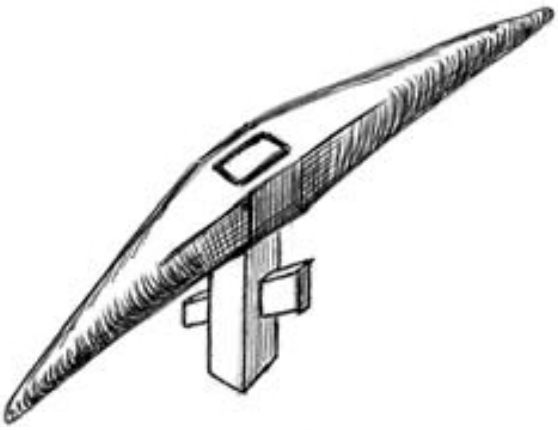
Re-Purposing Tools

Albin F. Drzewianowski,
Blacksmith Guild of Central Maryland

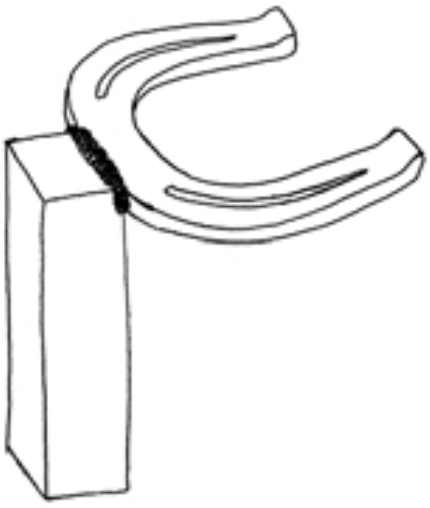
Paul Thorne has cut the handle off a large monkey wrench, chamfered the jaws and welded it onto a piece of angle iron. After welding a Hardy stem to the angle iron, his new mini-vise can either be used on the anvil or in a vise. I will be bolting the Hardy stem onto mine, so I can use a 7/8" stem with my small traveling anvil or a 1" stem with my shop anvil.



Dick Smith came up with an ingenious idea for a bick that would allow him
to fuller deep into a bell. He wedged steel into the eye hole of a pickax and
welded on a Hardy stem containing a wedge slot. He rounded the long edges
of the pick points. (This could also become a stake tool with a bit more modification. ~Ed.)



Fire Shovel Swage
Blacksmith Guild of Central Maryland
Cut a shovel blank to match the outside dimensions of the horseshoe, and dish the blank into the horseshoe swage to bend up the shovel edges. Punch holes for rivets to attach your own handle.



Hinge-bending Tool
by Mike Hriczescse, Klamath Falls, Oregon

(left) The hinge strap (represented by a piece of flat bar) rests on the table portion of the tool, with the length required to wrap around the hinge's pin held tight against the tool's hinge pin. The tool has an adjusting screw to accommodate the thickness of the hinge material.

(center) The tool is set up in a vise.

(right) By lifting the curved handle, the tool is raised from the lowered position as seen in the left photo, to the closed position seen here. In the process, the hinge material is pried up and around the pin as shown.

Mini-Leafing Tool ~ One of Brent Bailey's Favorites

Forging Curved Chisels

By Brian Gilbert
With help from Gary Scasbrick

A good selection of curved chisels is an important part of a blacksmith's toolbox. I realized just how important when I started making the backplate for the lift latch in this issue. I had a few, but I didn't have enough, especially the tightly curved chisels required for the small cuts.

You can make curved chisels either by grinding the curves or by forging the curves. A third option would be a combination of the two techniques… grinding a profile that had been upset and forged to shape. I made some chisels both ways, and each method has it's advantages and disadvantages.

I made these tools out of spring steel. I know, I know… like Francis always said, spring steel is for making springs, use TOOL steel for tools. And he's right. But, I didn't have any laying around at the time, and there are several coil springs out back just begging for a good recycling. Besides, these were experiments. As soon as I get all the kinks worked out, I'll make myself some proper chisels. Really.

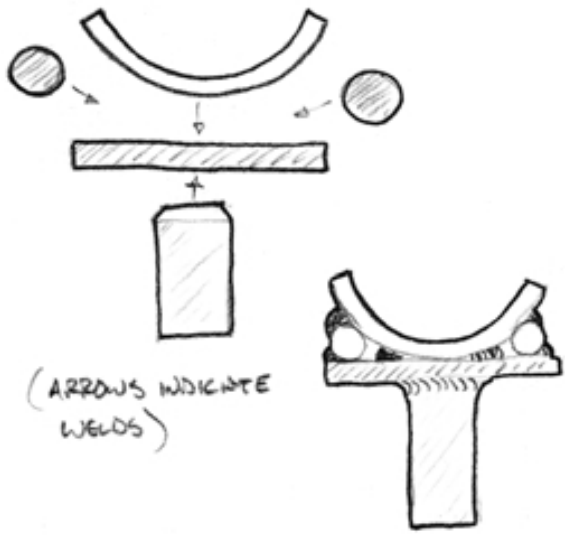


Figure 1–A built-up swage

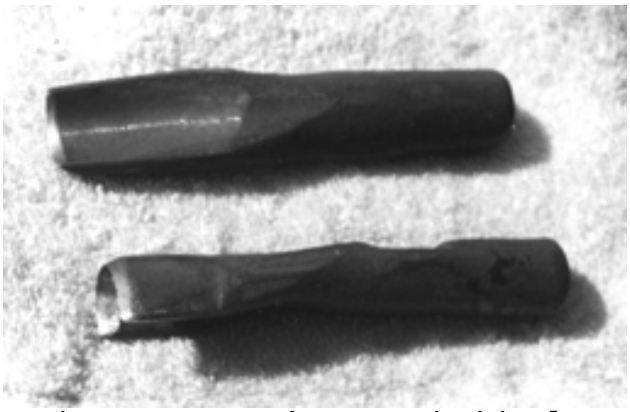


Figure 2- Gary's curved chisels

Gary says that for cold-cutting chisels, coil-spring steel is a good choice. A broad-curved chisel is fairly easy to forge. Just flatten the end a bit, then hammer in the desired curve using a swedge block. As you flatten the tool, take care to hammer equally on both sides of the tool, especially if the blade is thin. This will reduce the chance of warping when quenched. If you don't have a swedge, you can make a passable substitute by splitting a short piece of thickwall pipe, and welding up the sides for support. Leave the edge of the forged blade rather thick, and grind the bevel into place. I sometimes cheat and forge a preliminary bevel… this doesn't seem to hurt as long as you leave some thickness where the cutting edge will be

After you forge a curve, you need to make a test to see if the curve is circular. Push the hot edge into a scrap board a few times, and try to make a circle. If the burn marks don't line up after you've gone around, your curve isn't an arc of a true circle, and it won't be as easy or accurate to use. Adjust if necessary, and repeat this test after you've ground the edge using a block of wax, lead, clay, etc.

There may be cases where you don't want a curve that is an arc of a circle. Gary's chisels for his holly candleholder are elliptical in shape. That's fine, but it's a good idea to try to make chisels that are elliptical because you

want them that way, and not because they "just turn out elliptical." Take the time to make these right, or you'll be paying for your haste many times over as you use these tools.

I made several chisels this way, with the bevel on both the inside and the outside. I guess this makes the chisels "left handed" or "right handed" but I'm not so sure. This did allow me to cut the curves on my backplate with the bevel built in… I had a lot less filing to do because I had made the extra chisels. Gary pointed out a problem with making chisels with one-sided bevels… they're weaker, because the cutting edge isn't supported on the flat side. Since I was using the beveled side anyway, a better approach would be to make a chisel with a thick edge, beveled on both sides. Like a curved cold chisel, I suppose.

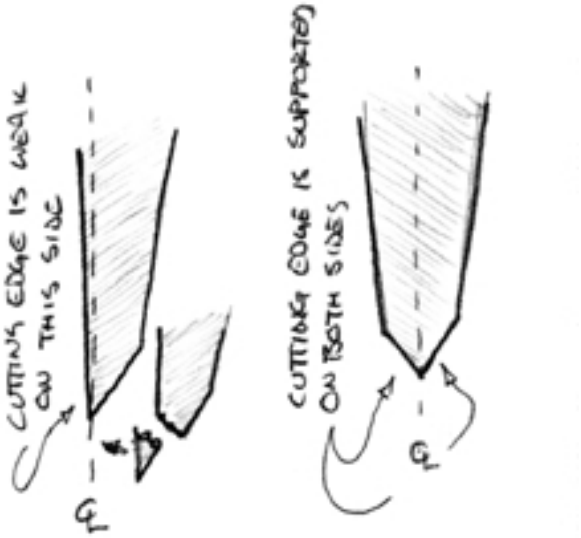
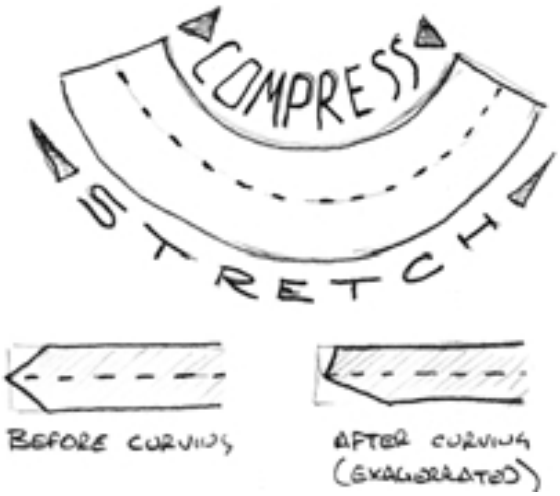


Figure 3–Forging dynamics of small curved chisels

When you start making the smaller curves, things change dramatically. I discovered that the smallest curves are best made by grinding a profile down from solid stock. I figured this out by forging some experimental chisels that had a 3/4" radius. Some interesting things happen when you forge curves this small. The steel on the inside of the radius compresses, and the steel is forced outward toward the cutting edge. Conversely, the steel on the outside of the radius is stretched and shrinks. This pulls the steel away from the cutting edge… take a look at the illustration to see what I'm talking about.

When the bevel is on the inside, it compresses. Its angle increases… that is, it becomes steeper, more like a cold chisel. And the bevel becomes curved as well.

I also discovered something interesting about the cutting edge. If you grind or forge the cutting edge straight across, and then bend it, the corners of the chisel move forward, resulting in a cutting edge that isn't perpendicular to the body of the chisel. You can compensate for this by grinding a slight radius into the edge before you bend it. For some reason, this doesn't seem to be the case if the bevel is on the outside of the curve.



You'll also notice, if you make a chisel this way, that a small depression or hollow forms just behind the blade, where the steel transitions from a blade to the shaft. The reason this happens is that the blade is a slightly conical shape, while the shaft is a cylinder. This little depression bugged me to no end… it just didn't look right. I can minimize it by peening just

behind the blade, but it's always there to some extent.

Whenever I want to figure something like this out, I get out my son's play-dough. I made a few little play-dough chisels, and it looks like it could be forged out, but a special swedge with a flared end might help. (Play-dough, plasticine, or sculptor's wax can also be used for figuring out leaf patterns as well.)

The end result of all this is that you'll have to do some grinding no matter what you do. Grinding is inevitable, because you can't harden and temper a sharp cutting edge… the carbon burns out of the very tip of the edge, which is where you need it most.

Obviously, outside bevels are easier to grind than inside bevels… especially on tiny chisels. Gary tells me that the best way to do this is with a die grinder or a small stone mounted in a drill press.

Another option would be buying a 1/2" grinding wheel and dressing the edge round, and using this to grind your inside bevels.

Start by forging the end square or slightly rectangular, depending on the size of your curve. Grind the inside curve, and remember to keep it circular. Next grind the outside curve, leaving about an eighth of an inch at the edge. Harden and temper, and then grind the bevel either on the inside or the outside, depending on your needs. I suppose you could grind a bevel on both sides if you wanted.

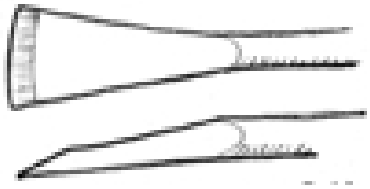
As far as hardening and tempering goes, I'm still experimenting to find the best practical combination. A friend, Gary Scasbrick, has done a bit of work in this area. He tells me that for cold-cutting chisels, 5160 works great. Scrap coil springs are a good source for this.

If you make tools from coil springs, you need to watch out for cracks in the steel. These usually don't show up until you've gone to the trouble of straightening a length of spring, but if you find cracks, throw the whole spring away.

The cracks are a result of the steel work-hardening over the years, and are a clear indicator of steel that is about to fail completely. Even if you did find a section where you didn't see any cracks, a tool made from that section would likely break in use, possibly hurting someone in the process. Don't take chances in the shop!

The good news is that springs are often replaced due to sagging and bending rather than breaking. These springs aren't any good for holding up a car, but they'll still make passable tools.

The way Gary hardens and tempers these is by heating to nonmagnetic, hardening in oil. Gary says that tempering heat should be applied slowly to soak all the way through or the surface of the tool will show the proper tempering color while the core is still too hard. He got into too much trouble tempering tools in his kitchen, so he has an old oven in his shop. The entire tool is heated until a deep straw/bronze color is show-



For an inside bevel, blade should be fairly flat

If you leave the cutting edge straight..

The tips will be thrown forward.(this doesn't seem to happen if the bevel is on the other side)

After forging bevel will steepen and curve

ing, then he turns the oven off and lets the tool cool down slowly. The thermostats on ovens are notoriously inaccurate. To help judge the temperature, Gary drilled a hole through the side and installed a dial type cooking thermometer, but as he says, don't try this at home. If you are using an oven to temper, try soaking the tool at 50 degrees cooler than you want, and then slowly increase the temperature until the color you're looking for arrives on the tool. Often, you won't have to increase the temperature very much. A tool tempered this way seems to get the proper color at a lower temperature than it should. Remember to temper by the color on the tool, not the number on a thermometer.

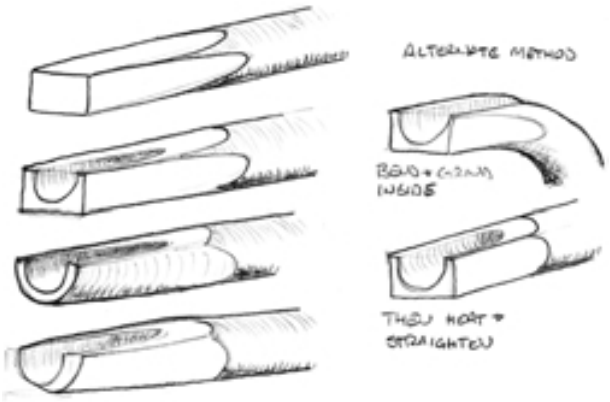


Figure 4–Grinding chisels

I've seen Gary's chisels that he's made using this method, and he's gotten excellent results. Gary's curved chisels were used to make three holly candleholders, and they are still VERY sharp, with no cracking evident at the cutting edge. By contrast, one of the chisels I made (before I spoke with Gary) I tempered in the fire to a light straw. It cut well, but a missed hit on the last cut destroyed the chisel. The entire cutting edge broke off, showing large crystalline- grain growth.

For hot cutting tools, Gary tells me that he's been really pleased with tools made from from a red-heat tolerant steel, like H-13. "I've made a lot of tools and seen a lot of tools made from regular carbon steel. They all work OK, but they can't hold a candle to a tool made from one of these air-hardening steels. I've been using H-13 lately… it is trickier to forge, but when you're done, you've got a tool that works a lot better. If the old smiths had access to red-heat tolerant steels, they would have used it." Frank Turley agrees with Gary. He likes S-7, and gave a demonstration at the 1999 Madison conference on forging it. A curved chisel made by grinding might be fairly straightforward to make, but I haven't tried this yet. Forging tools from H-13 or S-7 is an article in itself… I'll see if I can't get my hands on some and give it a try for a future issue.

Don't forget the other end of the chisel. It should be ground to a dome shape so that any strike with the hammer is directed at the very center of the tool. The corners of the head should be ground off at 45 degrees to minimize spalling or "mushrooming" of the head.

The hammered end of a chisel should never be hardened. Weygers says in "The Making of Tools" (Van Nostrand, 1973) that this is an option "to keep the steel from 'cauliflowering' after long use" but I disagree. Hardened steel should never strike hardened steel. If you do, something is eventually going to crack and fly off. If it's harder than you hammer, then you'll ding up the face, which will in turn ding up your work. In fact, it's not a bad idea to keep a cheap hammer handy to strike tools with, and save your favorite hammer for working hot steel.

SPRING 2000 HAMMER'S BLOW

The One-Brick Forge

Al Bakke, Saskatoon, Canada from his demonstration at ABANA 2012 in Rapid City

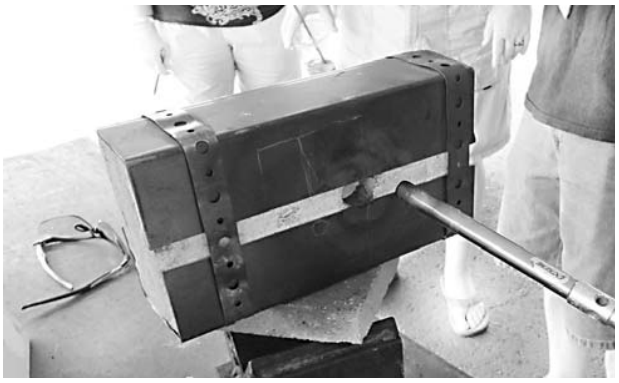
Al Bakke with his one-brick forge

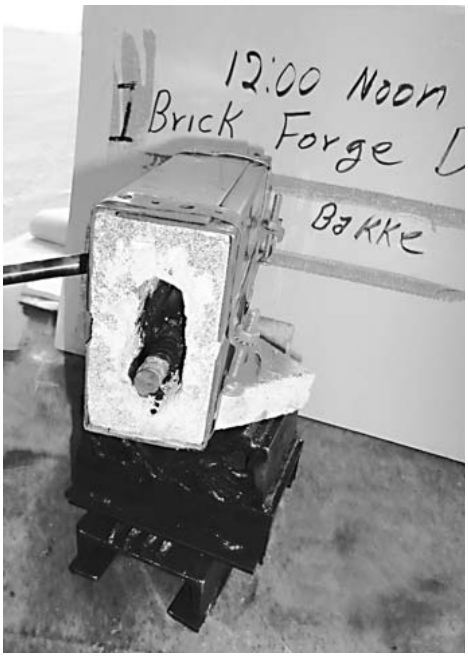
It doesn't get much simpler than this! A one-brick gas forge, capable of producing welding heats. Al Bakke uses this forge to produce small runs of Damascus steel!

At the ABANA conference, Al gave a quick demonstration and a good discussion of his small forge. It's pretty simple: Take a lightweight 9" x 5" x 21 2" fire brick. Hollow it out. Make a hole for the propane torch. Wrap it in a bit of sheet metal to contain everything, and then, go to work.

Use only one brick! Al was adamant that if you used anything larger, there would not be enough heat to obtain a welding heat. The key seems to be to contain the torch output in a small volume, concentrating the heat. The lengthwise hole goes most of the way through the block, stopping about an inch from the end – the hole should be about 1" wide, 21 2" high and about 8" deep. The fire hole is just large enough to admit the nozzle of the propane torch.

Al used a TurboTorch brand torch, a Victor Equipment brand torch designed to give high heats. He said that your hardware store variety propane torch is not hot enough for welding Damascus.





Views of the one-brick forge and torch

Mike Mumford photos

About Al

Al has been an active craftsperson for over 40 years. In addition to blacksmithing and knifemaking, he also does lapidary and wood turning. He looks forward to each day as an opportunity for fun, hoping to end each day with a heart full of giggles from the enjoyment that comes from working with his hands.

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